

## EDITORIAL

## Mortgaging the future: the failure to address nutrition deficiencies and obesity

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Five years after the 1999 National Nutrition Survey (NNS) in Mexico, and after several analyses addressing the major issues that have arisen since the NNS have been published, nutrition problems and their differential impact along the socioeconomic gradient remain at the forefront of the public health agenda. Federal programs have enjoyed a measure of improvement, following efforts to collect representative data and undertake cogent analyses to elucidate the meaning of current nutritional status at the national level.<sup>1</sup> Such policies and programs have been limited by a lack of funding, and federal programs are still no closer to a comprehensive, national-level food policy. Excess weight has become a public health problem<sup>2,3</sup> and together with hunger (and, more broadly, food insecurity), micronutrient deficiencies, anemia, and inadequate vitamin intake,<sup>4-7</sup> constitute a public health crisis as they pose a sizeable threat to the future health of the country.

Even as studies have linked malnutrition and food insecurity to hunger, hunger itself has received surprisingly little attention in the context of the 1999 NNS. Common sense suggests that hunger and food insecurity are more likely to affect poor people because they have fewer resources with which to buy food - but we do not fully understand what hunger and food insecurity mean in the social contexts of Mexico as most investigations address trends in "hard" epidemiological data, confirming the socio-economic divide in the disease burden affecting poorer households.<sup>8,9</sup> Food insecurity occurs whenever the availability of safe, nutritionally adequate food, or the ability to acquire acceptable foods in socially acceptable ways, is limited. Why excess weight is becoming increasingly common in most age and population groups, against a background of malnutrition and food insecurity, deserves further investigation. To say that excess weight results from an imbalance of energy intake and expenditure provides little insight into important social and environmental causes of higher energy consumption

and lower energy expenditure. While the more obvious causes include energy-rich foods, larger portion sizes, and lower physical activity levels,<sup>10</sup> these causes fail to illustrate how lifestyle options induce excess weight linked to food insecurity, lack of exercise and leisure facilities (mostly), non-regulated advertising in the mass media, and even the reduced variety of comfort foods and comfort beverage options to choose from in everyday life.

While the Mexican population is gaining weight across all population groups investigated in the 1999 NNS,<sup>2,11</sup> comparing teenage and adult women from different regions, rural-urban areas, and socioeconomic statuses reveals that marginal groups are increasingly relying on the consumption of inexpensive, energy-dense foods and beverages. In addition to the social and environmental causes of higher energy consumption and lower energy expenditures, these marginal households face the added burden of low income - just as it has been documented in the United States.<sup>12</sup> Food insecurity occurs when people, due to economic constraints, do not have enough food to meet their basic needs. Motivated by the fear of running out of food, they reduce the quality of their diets and/or adjust the quantity of food. Food insecurity is not limited to those who always have inadequate energy supplies, which helps explain why those who are insecure about food can also be overweight.

Data from the United States suggest that four factors interact when an inadequate food supply leads to weight gain. 1) *The need to make best use of caloric intake*. Poor families must maximize the number of available calories to avoid suffering frequent, and often painful, hunger. This strategy undermines a healthy balance of nutritious foods.<sup>13</sup> The greater the economic constraints, the harder it becomes for poor families to select nutritious foods.<sup>14</sup> 2) *The trade-off between food quantity and quality*. In food-insecure households, food quality is generally affected before food quantity. Households reduce food spending by changing food quality instead of food quantity.<sup>15</sup> As a result, while

families may get enough food to avoid feeling hungry, they could also be malnourished. 3) *Overeating when food is available*. Chronic fluctuations in food availability can cause people to eat more than normal when food is available. Over time, this cycle causes weight gain.<sup>16</sup> 4) *Physiologic changes associated with discontinuous food availability*. Physiologic changes may occur to help the body conserve energy when diets are often inadequate. The body compensates for periodic food shortages by becoming more efficient at storing calories.<sup>17</sup>

Hunger, food insecurity, and obesity have costly direct and indirect consequences. Obesity is a risk factor for heart disease, diabetes, several types of cancer, and other nutrition-related chronic diseases (NRCDC).<sup>1</sup> Although we still do not have an actual quantification of excess weight's impact on NRCDC in Mexico, excess weight and NRCDC have been linked with premature death and disability, increased health care costs, and lost productivity.<sup>18-20</sup> Hunger and food insecurity impair health status, making illness more likely. Hunger not only reduces a child's ability to learn, but it also negatively affects behavior, increasing the need for mental health and special education services.<sup>21</sup> While this scenario is distressing, considering the significant nutritional problems the 1999 NNS identified - such as 20 to 25% of children and women of the entire country being anemic, or 26% of children and 60% of women of the entire country having excess weight - the conclusion that we lack appropriate solutions to these problems is unavoidable.

It could be, however, that the scale of the solutions has not yet matched the magnitude of the problems. Again citing American data, federal nutrition programs - the Food Stamp Program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and child nutrition programs like school lunch and school breakfast - have protected the people most vulnerable to hunger and malnutrition. Perhaps more importantly, the programs help families fortify

stronger food security and enhance household nutrition. The fact that each dollar in food stamps increases a household's Healthy Eating Index score (an indicator of overall dietary quality) is an example of these achievements.<sup>22</sup> WIC has been shown to improve the dietary intake of pregnant and post-partum women and young children<sup>23</sup> - results replicated in other programs with similar philosophies.<sup>24</sup> Furthermore, children who participate in school lunch and breakfast programs, compared with students who participate in neither program, consume more than twice as many servings of milk and fruits and vegetables, and one-quarter the number of servings of soda and fruit-flavored drinks.<sup>25</sup>

A cursory look at the Mexican data and the federal policy modifications implemented in response to the impacts identified in the 1999 NNS<sup>1</sup> indicate that such programs are restricted to people in extreme poverty, effectively leaving without assistance a large segment of the population that is not terribly poor, but nevertheless struggles with food insecurity, moderate-to-severe malnutrition, and excess weight. The magnitude of micronutrient and macronutrient deficiencies, and the constantly ris-

ing epidemic of excess weight, suggests that public health and food policy initiatives have been too timid to effectively meet these challenges.

A fundamental goal of health research and epidemiological information is to influence change. Thus, epidemiological data that do not lead to change are of little use. To protect and promote health and well-being, a strong governmental public health infrastructure should lead the way in affecting change.<sup>26</sup> An example of such major change in the philosophy and the systems used to provide health care at a national level has been recently attained in Thailand, where research informed policy development and implementation.<sup>27</sup> Improving the nutrition of every household in the country through food policies informed by research, and sufficiently funded by re-orienting public spending, will advance the health and security of millions of Mexicans, today and in the future.

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