Food insecurity and excessive weight gain: Evidence, measurement and policy

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Global evidence of the double-burden of malnutrition

Nearly 1/3 of “high stunting-burden” countries have overweight + obesity rates >40%

Data source: WHO Global Infobase Global Obesity Comparison Tool
Global evidence of the epidemic of overweight even in children
The association between food insecurity and excess weight gain

The increasing prevalence of overweight/obesity observed in many countries may be attributable to a complex web of genetic, psychosocial, economic, dietary, life cycle and environmental and behavioral factors.
Life course in the development of the nutrition transition
Enfoque do curso da vida no desenvolvimento da transição nutricional.
The association between food insecurity and excess weight gain

Food insecurity, defined as poor access to food, is layered on top of these complex factors in ways that may lead to the “unexpected” observation of overweight/obesity in populations traditionally vulnerable to undernutrition.
Excess weight and food insecurity - gender and age differences

- Brazil and US – unclear association in children. Co-exists but not clearly causal (i.e. children in FI households are no more overweight than those in FS households)
- In Brazil – excessive weight was more common in adolescent women in Severe FI households while in adult women, it was more common in moderately severe FI households
- Strong associations are seen more often for women than for men
Causal connections between food insecurity and excess weight

Even if not causal, excessive weight co-exists with food insecurity in certain age and gender categories.
Hypotheses in a multi-factoral context

Food insecurity is neither sufficient nor necessary to cause excessive weight gain

1. Episodic nature of food insecurity and limited economic resources leading to overcompensation when resources become (periodically) adequate, such as when benefits received

2. Diet quality – limited access to more expensive healthy and fresh foods ➔ consuming more energy-dense foods to satiate hunger.
Hypotheses in a multi-factorial context

3. Stress - physiological effect that can trigger hunger and increased need for food. Palatable foods (energy dense) can help to calm stress.

4. Mother’s stress due to FI during child’s early years may contribute to child excess weight gain

5. Obesity → food insecurity due to reduced work opportunities through disability or lack of mobility
Diet quality, food security and excess weight – what is known?

- A number of studies have shown that both household and individual diets may be of inferior quality due to food insecurity.

- Related to limitations in both physical and economic access to affordable healthy foods.
Food insecurity and diet quality - Brazil

Consumo diario de algunos grupos de alimentos por categoría de (in)seguridad alimentaria- Campinas-Brasil 2004
Food insecurity and diet quality

In this same study, it was shown that the selection of cheaper foods and those of high energy density increased proportionately with the severity of household food insecurity.

Similar to this Brazilian study, also in Mexico an inverse association between food security status and the consumption of “high quality” foods such as fruits, vegetables and animal products.

*Manual de ELCSA, 2012*
Measurement issues

FS concept does not reflect how severe food insecurity can be associated with obesity (progression from mild/mod to severe would imply food deficiencies, not excessive weight).

Figure: Food insecurity severity along a continuous scale

<table>
<thead>
<tr>
<th>Mild food insecurity</th>
<th>Severe food insecurity</th>
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<tbody>
<tr>
<td>Worrying about ability to obtain food</td>
<td>Compromising quality and variety of food</td>
</tr>
<tr>
<td></td>
<td>Reducing quantities, Experiencing skipping meals</td>
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<tr>
<td></td>
<td>hunger</td>
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</tbody>
</table>
Measurement issues

Temporal issues of different measures – diet (1day-1week), FI (3-12 m), obesity (over time). Because obesity and overweight are long-term processes, whereas food insecurity may be experienced episodically, one would not necessarily anticipate a strong association across all groups or we are not able to capture true associations.

Need for accurate assessment of diet composition and eating frequencies INCLUDING SNACKS and ways to capture consumption of HIGHLY PROCESSED FOODS

Measurement of food security and diet at individual level as well as household might help to disentangle age and gender differences in the relationship between excess weight and food insecurity
Discussion points – communication

Policy makers need to justify investments for the public good. The co-existence of food insecurity and overweight/obesity may seem puzzling both for policy makers and for the general public.

This has implications for a communication strategy between public health officials and researchers and those who must make difficult choices on the best use of public funds.
Discussion points – Importance

Why is it important to address the problem of overweight and obesity in food insecure populations?

- Obesity per se does not seem to increase all-cause mortality (NCHS 2012)
- Overweight and obesity are risk factors for morbidity, disability and mortality from chronic diseases
- Food insecure and poor persons at risk of CD have fewer means for prevention and treatment such as accessing health care and improving diets
- Interrupt transmission to the next generation
Discussion points - Approaches

IMPROVING DIET QUALITY IN THE POPULATION

As countries improve their economic condition, diets changes to include more:

- animal food products
- fats and oils
- Sugars
- ultra-processed foods

Declines in consumption of traditional protein sources such as legumes. (India)

Governments and health authorities should use all possible methods, including legislation and statutory regulation, to halt and reverse the replacement of minimally processed foods and processed culinary ingredients by ultra-processed food products. (C. Monteiro)
IMPROVING DIET QUALITY IN FOOD INSECURE POPULATIONS

Research has consistently shown that food insecure population groups have lower quality diets than food secure groups.

How can Governments address this through changes in policy, programmes and benefit packages?

? More frequent transfers to avoid gaps in food access
? Improvements in markets and infrastructure to ensure availability of affordable fresh and safe foods
? Nutrition education to help beneficiaries make healthy choices
? If food aid is provided, re-evaluation of content to improve nutrition
A food system includes all processes and infrastructure involved in feeding a population: growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items.
Homes, schools, stores, restaurants, community gardens, soup kitchens, food banks and other physical settings where the cost and availability of food influence what people eat.

FOOD ENVIRONMENTS ARE LOCAL AND CULTURAL
Food deserts are defined as parts of the country with little or no supply of fruit, vegetables, and other healthful whole foods, usually found in impoverished areas. This is largely due to a lack of grocery stores, farmers’ markets, and healthy food providers.

**BUZZ WORDS – FOOD DESERTS**

**FOOD DESERTS ARE FAILURES OF THE FOOD SYSTEM AND FOOD ENVIRONMENT**
The built environment includes all aspects of the environment that are modified by humans, including homes, schools, workplaces, parks, industrial areas, and highways.

Various aspects of the built environment currently contribute to obesity by affecting eating and physical activity habits and facilitating an increasingly sedentary lifestyle.
Putting food systems, food environments and the built environment to work to reduce obesity