Double burden of malnutrition – situation analysis from Latin America

Manuel Ramirez-Zea, MD PhD
mramirez@incap.int
Nutrition Transition

- Replacement of traditional diets by energy dense diets and sedentary lifestyles.
- Increase in overweight, obesity and nutrition related non communicable diseases.
- Rapid shift in Latin America, where most countries still have high undernutrition prevalences and are unprepared to face the burden of overnutrition.
- Double burden of malnutrition (DBM): coexistence of under and overnutrition.
Double Burden of Malnutrition Levels

- **National**
  - Coexisting prevalences of malnutrition in the same country

- **Household**
  - Undernourished children and over nourished mothers in the same household

- **Individual**
  - Opposite conditions in the same individual
Participating countries
1. Descriptive Information

National Representative Surveys

Prevalences

Stunting:
- Height-for-age <2 z score

OW/OB in Children:
- BMI-for-age >+2 z scores or
- Weight-for-height >+2 z scores

OW/OB in Women:
- Overweight BMI ≥25 and < 30
- Obesity BMI ≥30

Anemia:
- Children: Hb <11 g/dL
- Women: Hb<12g/dL
2. DBM Assessment

At household and individual level

Following standardized methodology

**Expected Prevalence:** under the assumption of independent distributions of the conditions.

\[
\text{Expected Prevalence} = \frac{\text{Prevalence Condition 1} \times \text{Prevalence Condition 2}}{100} = \frac{50 \times 50}{100} = 25
\]

- Overweight/Obesity = 50%
- Stunting = 50%
2. DBM Assessment

At household and individual level

Following standardized methodology

**Observed Prevalence**: both conditions currently present in the same household or individual.

Comparison of expected VS observed prevalences using a Chi² test.

¹Dieffenbach and Stein 2012, p.772
National Prevalence of Stunting, Overweight and Anemia in Children <5y in LAC

National Prevalence of Excess Weight and Anemia in Women of Reproductive Age (12-49y) in LA

Household level: National prevalence of Overweight/Obese mother – Stunted Child Pairs in LA

* Observed vs expected prevalence significantly lower  \( P < 0.05 \)


<table>
<thead>
<tr>
<th>Country</th>
<th>Prevalence (%)</th>
<th>Expected Prevalence</th>
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</thead>
<tbody>
<tr>
<td>Guatemala</td>
<td>20.0 *[22.9]</td>
<td></td>
</tr>
<tr>
<td>Ecuador</td>
<td>13.1 *[14.3]</td>
<td></td>
</tr>
<tr>
<td>México</td>
<td>8.4 *[9.1]</td>
<td></td>
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<tr>
<td>Uruguay</td>
<td>6.3 *[7.0]</td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>5.1 *[6.9]</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>2.7 *[1.3]</td>
<td></td>
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</tbody>
</table>
Co-existence of stunted children and overweight mother (SCOM) in the same household (%)
Double burden of malnutrition at household level

Ramírez-Zea et al, AJCN 2014
Individual level: National Prevalence of Women of Reproductive Age with Excess weight and Anemia


*Observed vs expected prevalence significantly lower P < 0.05
*Observed vs expected prevalence significantly higher P < 0.05
Co-existence of overweight/obesity and short stature in Guatemalan women in reproductive age (%)
Individual level: Children with Excess Weight and Stunting

*Observed prevalence is greater than expected prevalence P < 0.05
*Observed prevalence is lower than expected prevalence P < 0.05

Conclusions

• Undernutrition and excess body weight risks seem to be largely unrelated at individual and household level

• Both types of conditions are highly common in Latin American countries: overweight and obesity coexist with undernutrition at the national level.

• These findings evidently indicate the need of policies and programs to tackle both conditions simultaneously in a coordinated fashion.
Policies and programs

• Countries like Ecuador and Guatemala have policies mostly directed to undernutrition.

• Uruguay, Brazil and Colombia have a number of programs focused on one or the other side of malnutrition.

• Some are in the process of redesigning programs and policies.

• Mexico is the only one considering the DBM in a single program by scaling up “Oportunidades”
Decision makers and program implementers need to:

- Be aware that individuals with different nutritional status may live within the same household

- Reformulate policies and programs:
  - Malnutrition in all its forms
  - Promote healthy growth (linear growth w/o excessive weight gain)
  - Promotion of healthy eating and physical activity throughout life course

- Appropriate evaluation and monitoring
Supplement authors


THANK YOU

Manuel Ramirez-Zea, MD PhD
mramirez@incap.int
Institute of Nutrition of Central America and Panama (INCAP)
INCAP Research Center for the Prevention of Chronic Diseases. (CIIPEC)