



Double burden of malnutrition – situation analysis from Latin America

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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

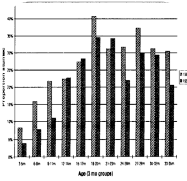
Participating countries



1. Descriptive Information



National Representative Surveys



Prevalences

Stunting:

- Height-for-age <math>< 2 z</math> 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 <math>< 11</math> g/dL

Women:

- Hb <math>< 12</math>g/dL

2. DBM Assessment



At household and individual level

Following standardized methodology

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

$$\text{Expected Prevalence} = \text{Prevalence Condition 1} \times \text{Prevalence Condition 2} \div 100$$



Overweight/Obesity = 50%



Stunting = 50%

$$\frac{50 \times 50}{100} = 25$$

2. DBM Assessment



At household and individual level

Following standardized methodology¹

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

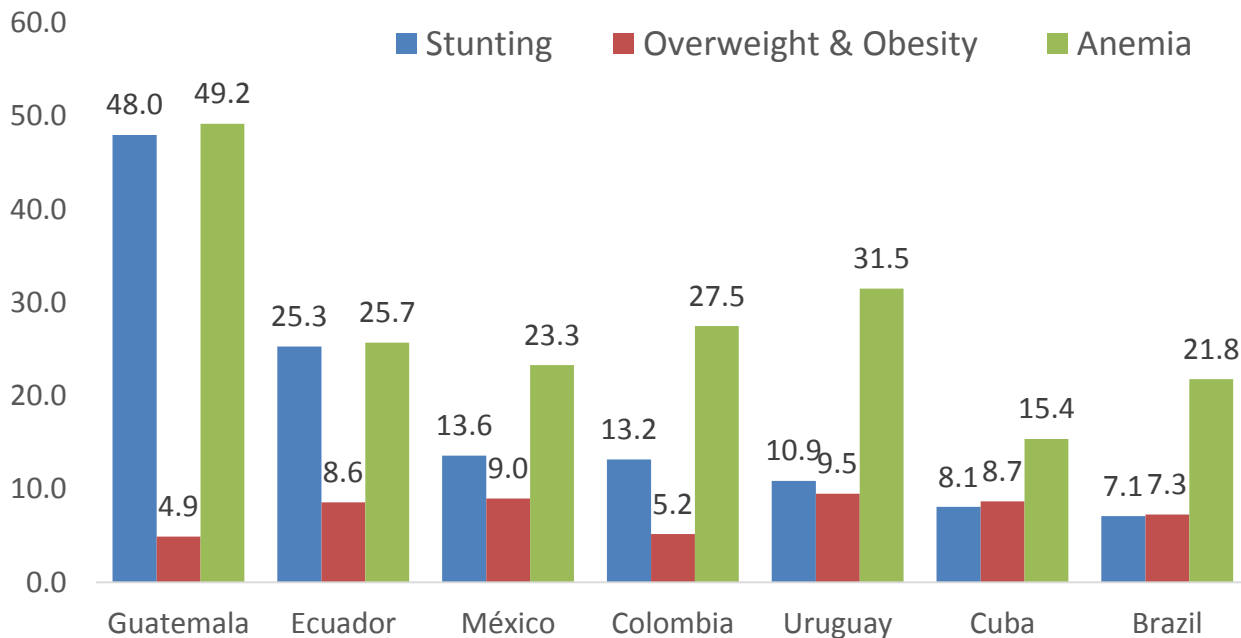


Comparison of expected VS observed prevalences using a Chi² test.

¹Dieffenbach and Stein 2012, p.772

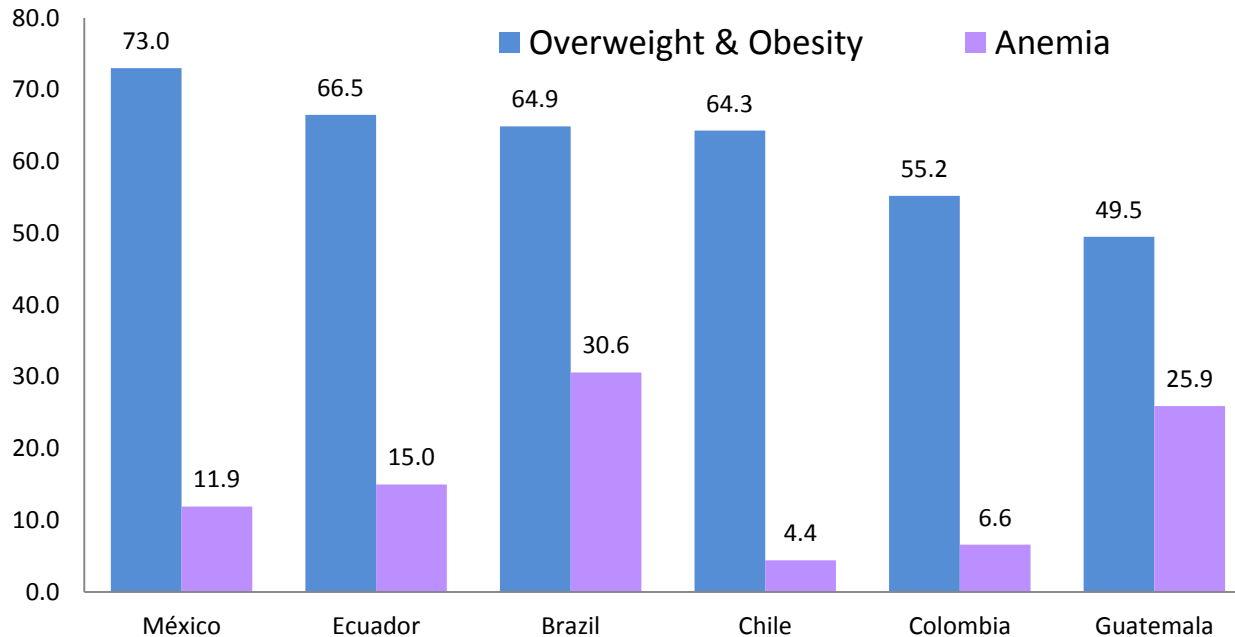
RESULTS

National Prevalence of Stunting, Overweight and Anemia in Children <5y in LAC



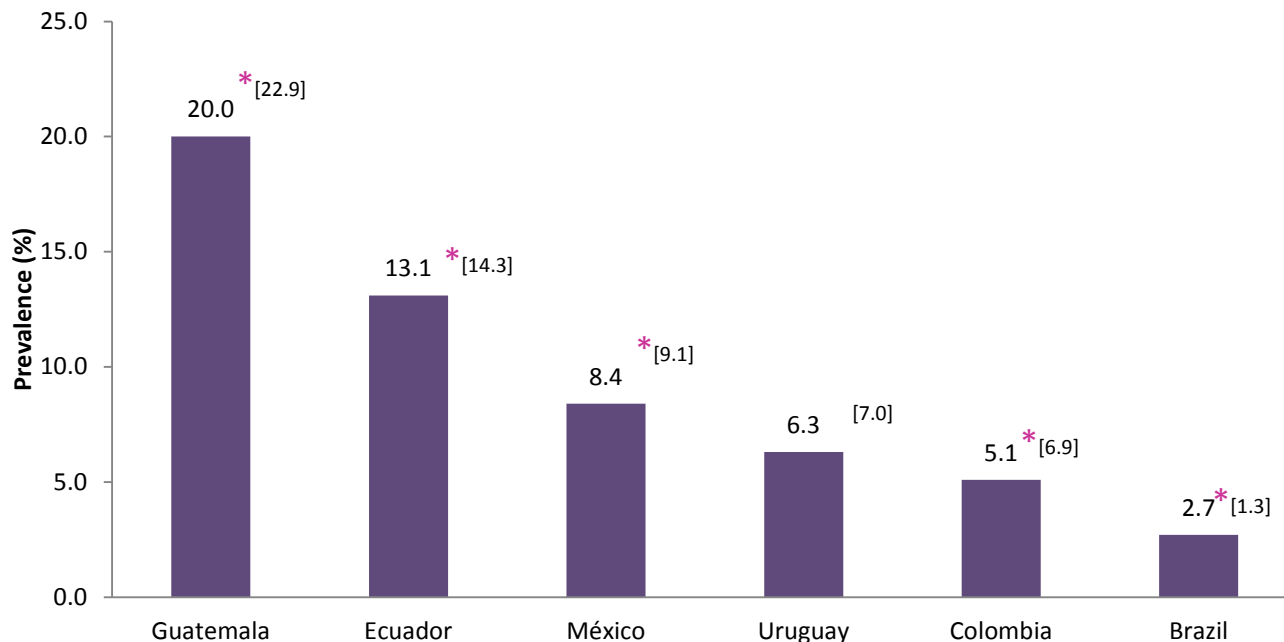
Rivera JA, et al. Am J Clin Nutr 2014.

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



Rivera JA, et al. Am J Clin Nutr 2014.

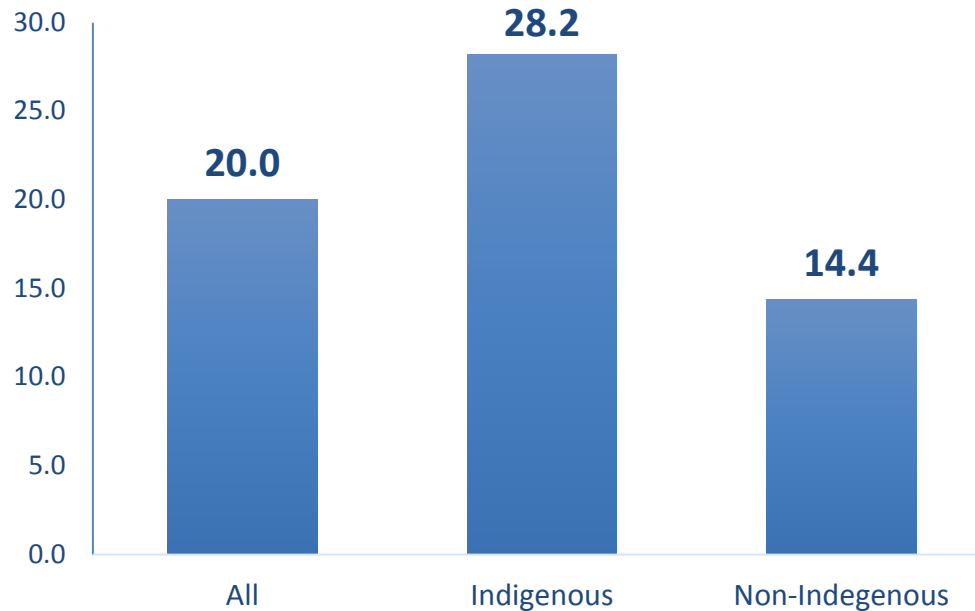
Household level: National prevalence of Overweight/Obese mother – Stunted Child Pairs in LA



* Observed vs expected prevalence significantly lower $P < 0.05$

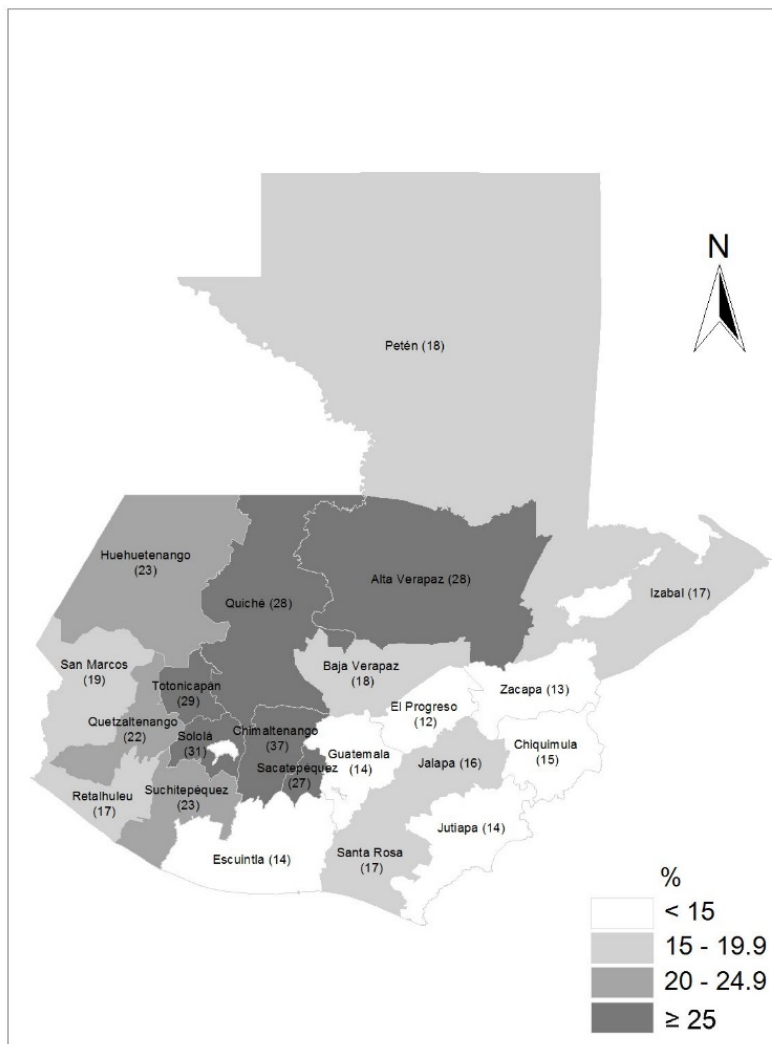
Rivera JA, et al. Am J Clin Nutr 2014.

Co-existence of stunted children and overweight mother (SCOM) in the same household (%)



Ramirez-Zea et al, AJCN 2014

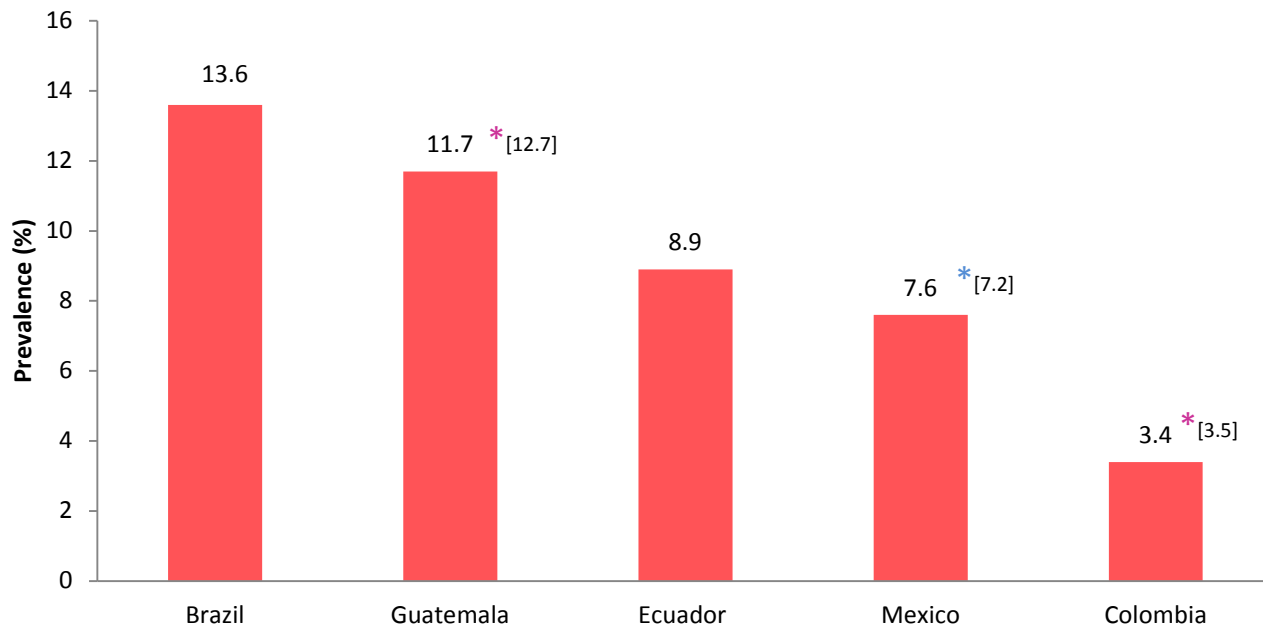
Double burden of malnutrition at household level



Ramirez-Zea et al, AJCN 2014

ro América y Panamá

Individual level: National Prevalence of Women of Reproductive Age with Excess weight and Anemia

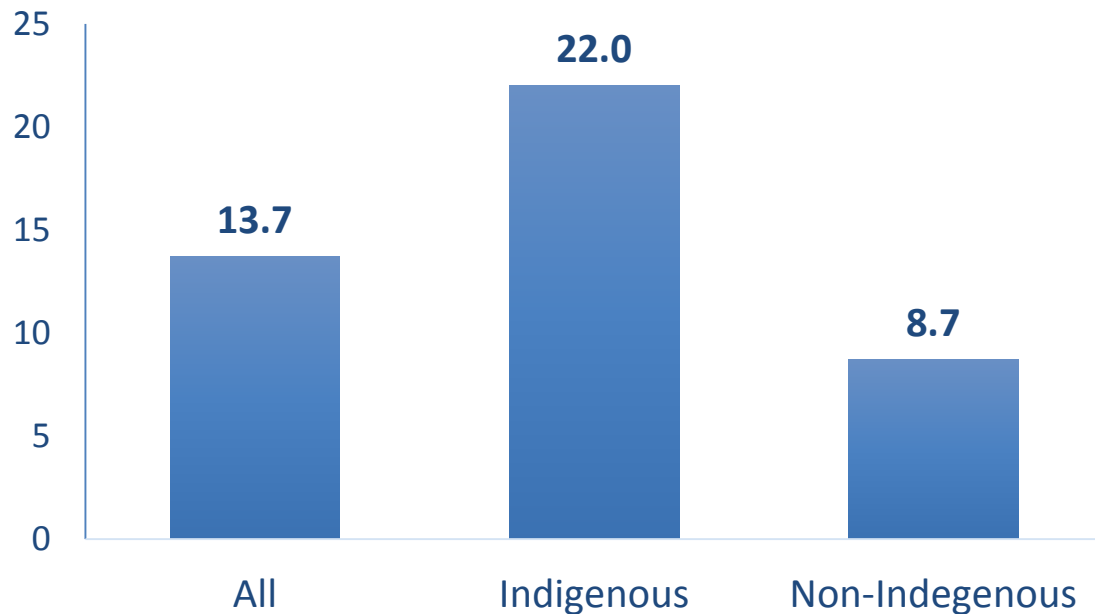


*Observed vs expected prevalence significantly lower $P < 0.05$

*Observed vs expected prevalence significantly higher $P < 0.05$

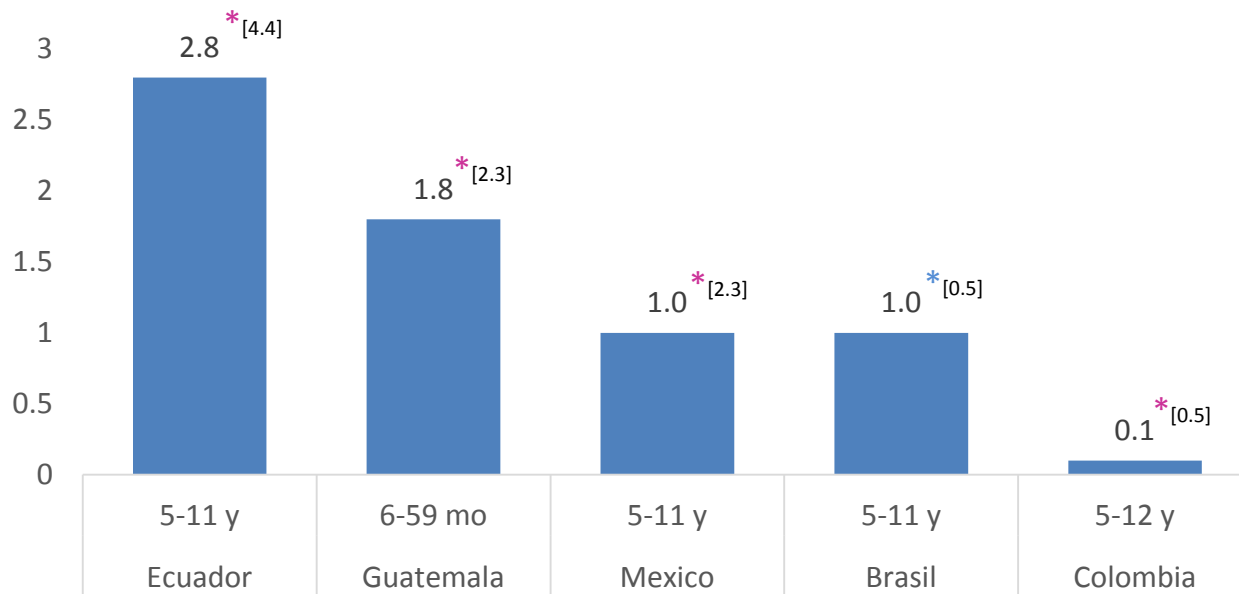
Rivera JA, et al. Am J Clin Nutr 2014.

Co-existence of overweight/obesity and short stature in Guatemalan women in reproductive age (%)



Ramirez-Zea et al, AJCN 2014

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 $P < 0.05$

Rivera JA, et al. Am J Clin Nutr 2014.

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

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THANK YOU

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