

***Under-stunting* the Child Nutrition Problem in the Philippines:**

Determining the Nutritional Status and Severity of Undernutrition among Children Aged 0-5 years old using Binary Logistic Regression, and Adjacent-Categories Logit Models

By

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INTRODUCTION



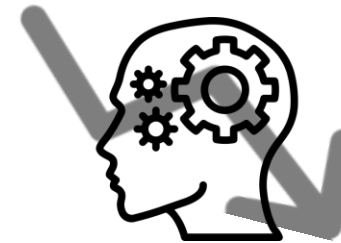
**Intensifies diseases that
Increases child morbidity**



**Leads to poorer
Academic performance**



**Leads to
economic losses**

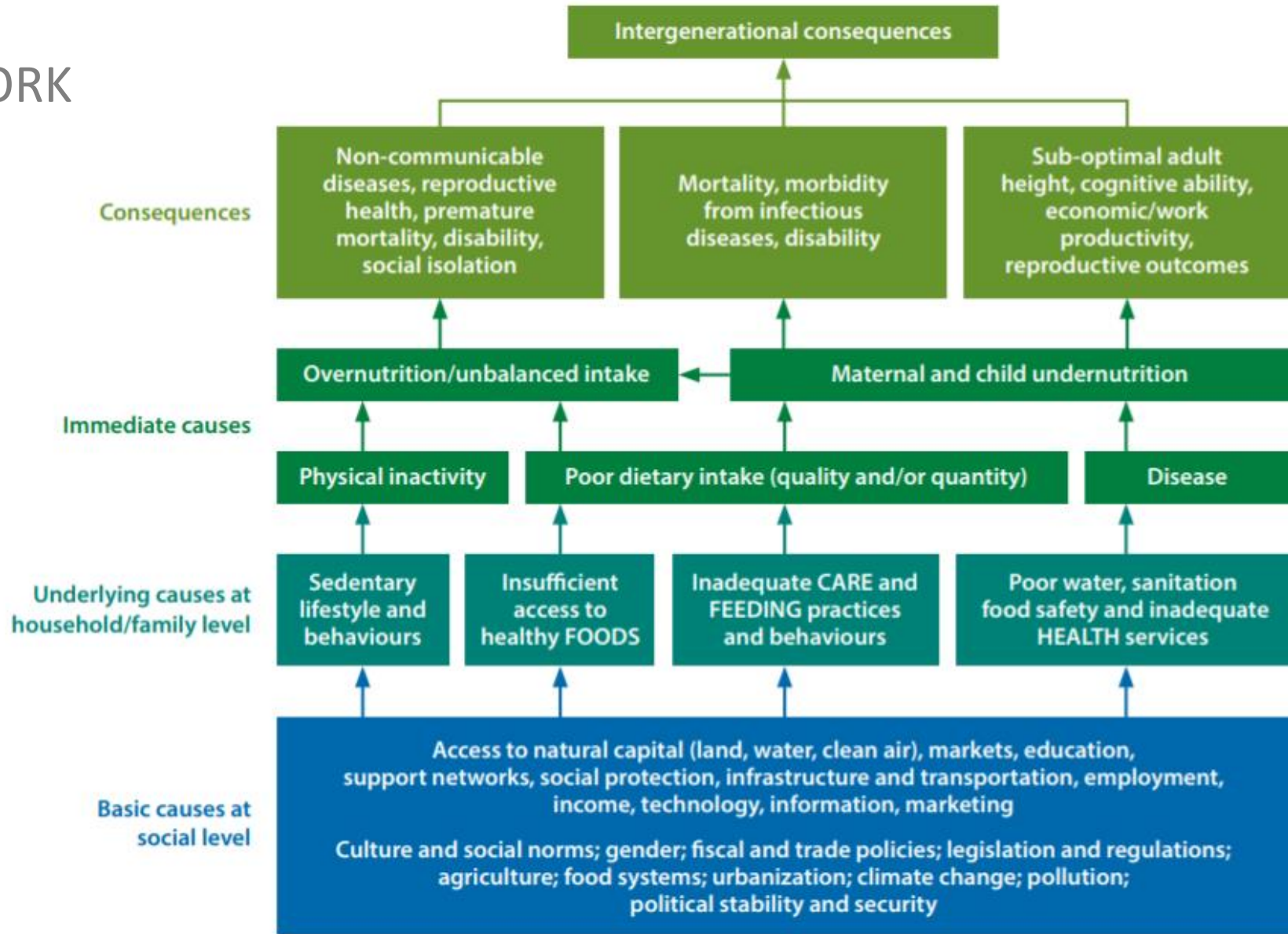


**Decreases productivity
and capability
to contribute in the economy**

OBJECTIVE

“To determine the factors affecting stunting among children below five years old in the Philippines. Also, to seeks to identify and characterize stunting at its different levels of severity.”

FRAMEWORK



Note: Basic, underlying and immediate causes are included in this figure, as well as outcomes of malnutrition. Figure adapted by ASEAN, UNICEF and WHO for publication in ASEAN/UNICEF/WHO (2016) Regional Report on Nutrition Security in ASEAN, Volume 2, from the 1997 UNICEF Conceptual Framework of Malnutrition. Not to be reproduced without permission.

METHODOLOGY

Nutritional Status (Stunted – Y/N)

Logistic

Regression Model

MODELS USED

Severity of Undernutrition

Adjacent Categories

Logit Model

DATA

Obtained from

2013 National Nutrition Survey

Data for

8,111 children aged 0 to 5 were considered

Response variables

Nutritional Status (Stunted)

Stunted: $HAZ < -2$

Severity of Undernutrition

Severely stunted: $HAZ < -3$

Moderately stunted: $-3 \leq HAZ < -2$

Mildly stunted: $-2 \leq HAZ < -1$

DATA

FACTORS

Individual

Maternal

Household

Age of Child (in months)

Years of schooling

Household Income (Wealth Quintile)

Sex of Child

Employment status

Household Size

Access to Safe Drinking Water
(Improved or unimproved water source)

RESULTS

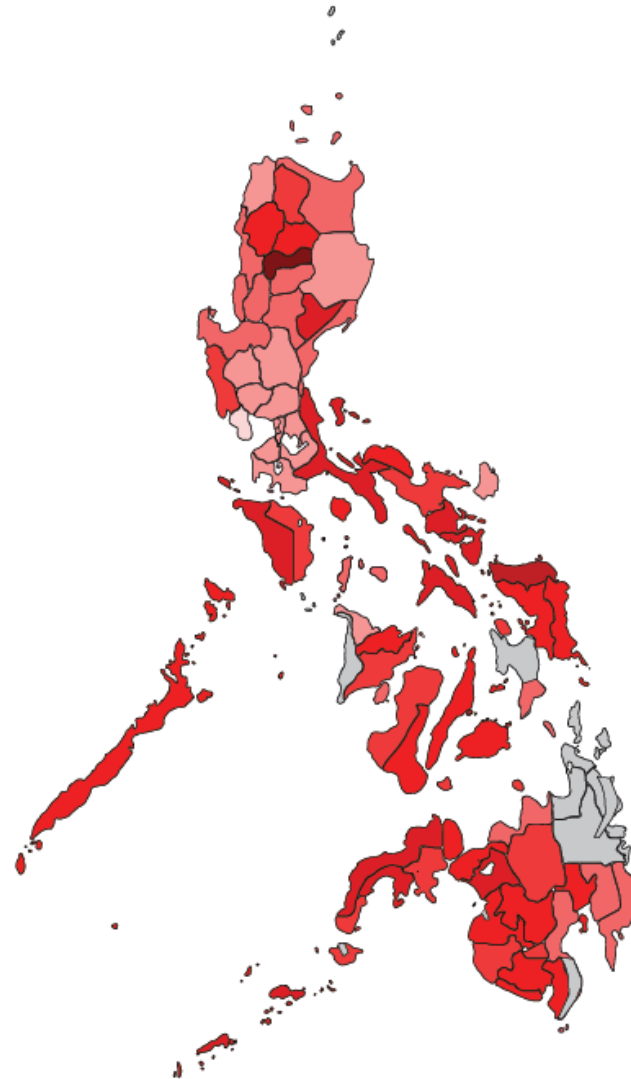
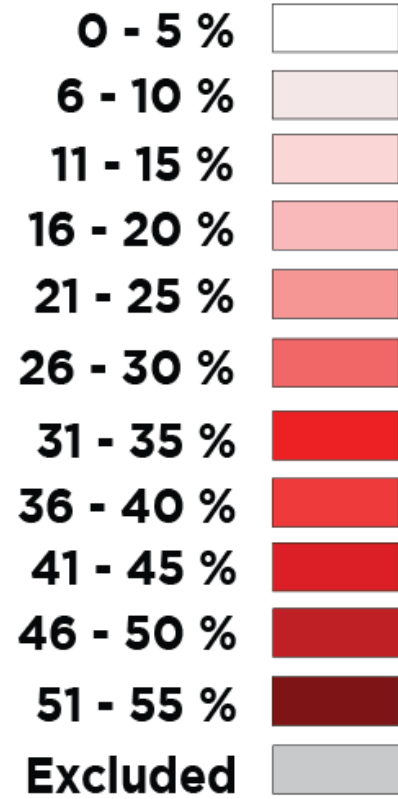


Figure 2. Thematic Map of the Prevalence of Stunting Children Aged 0 – 5 Years in the Philippines in 2013

RESULTS

Table 1. Severity and Prevalence of Undernutrition among Children Ages 0-5 Years Old

Form of Undernutrition	Severity (%)			Overall Prevalence (%)
	Mild	Moderate	Severe	
Stunting	50.67	34.11	15.22	29.85

RESULTS

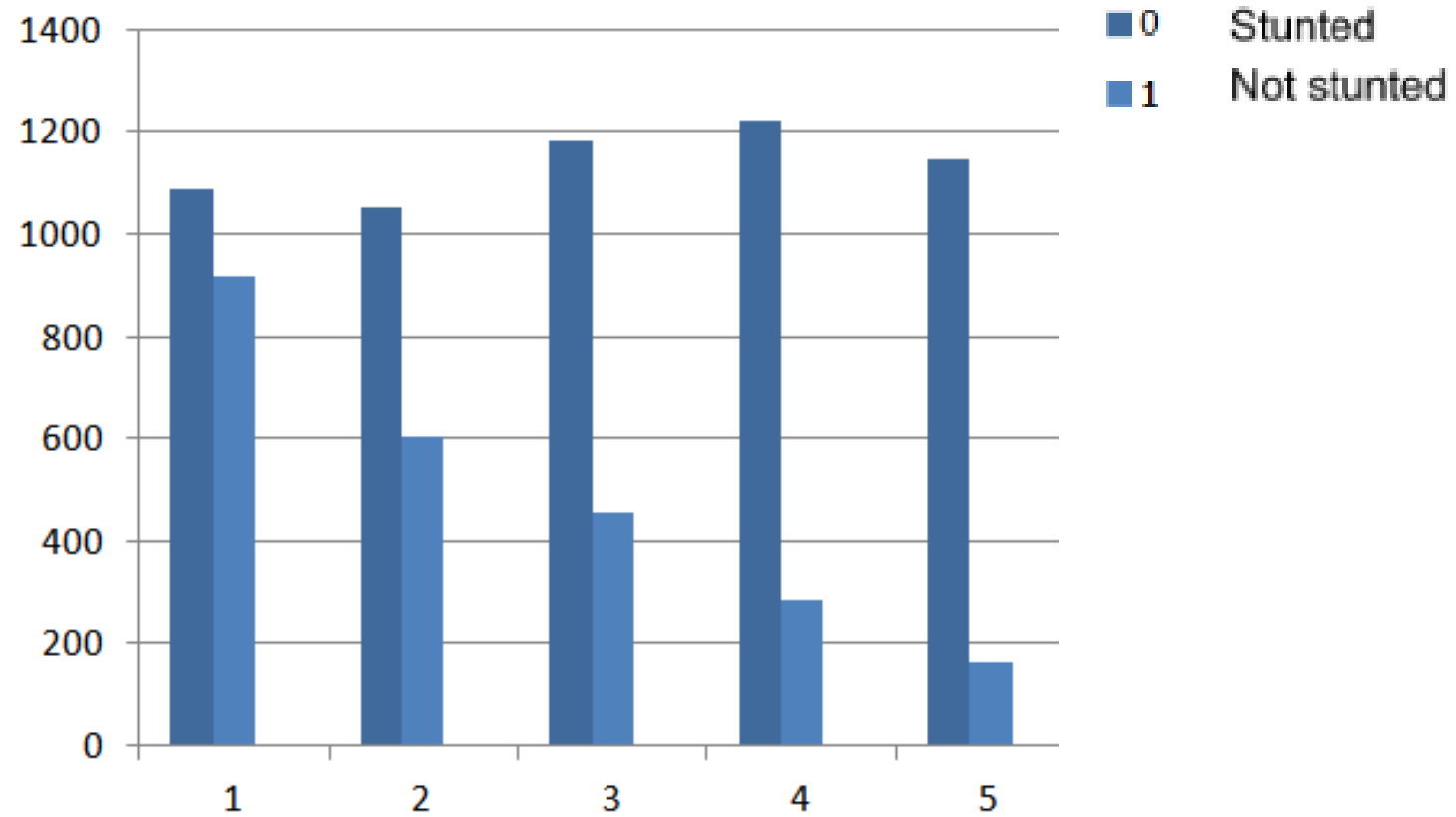
Table 2. Characteristics of Mothers in each Child Nutritional Status

	Mothers' Average Years of Schooling	Percentage of Employed Mothers
Among stunted children	11.43	25.40
Among all nourished children*	12.97	33.01

*Nourished children are those who neither stunted nor underweight

RESULTS

Figure 3: Number of Cases of Stunted Children per Wealth Quintile



RESULTS

Variance Inflation Factors
(VIF) indicate

**Absence of
multicollinearity**

64.14%

Predictive power of the
logistic regression model

62.65%

Sensitivity

67.49%

Specificity

RESULTS

Table 4. Results of the Logistic Regression and Adjacent-Categories Logit Models

Parameter	LOGISTIC		ADJACENT CATEGORIES		
	Exponentiated Estimate	p-value	Exponentiated Estimate	p-value	
Intercept 1	0.453	<0.000	1.133	0.266	
Intercept 2	---	---	1.887	<0.000	
Age in months	1.020	<0.000	0.996	0.001	
Sex (Baseline: Female)	1.114	0.039	0.924	*0.051	
Household Size	1.054	<0.000	0.974	0.001	
Wealth Quintile (Baseline: Poorest)	Poor	0.781	<0.000	1.127	0.027
	Middle	0.554	<0.000	1.382	<0.000
	Rich	0.352	<0.000	1.787	<0.000
	Richest	0.235	<0.000	1.806	<0.000
Primary source of drinking water	---	---	---	---	
Maternal Employment (Baseline: Unemployed mother)	0.834	0.003	---	---	
Mother's Years of Schooling	0.953	<0.00	1.033	<0.000	

SUMMARY

- The age and sex of a child are significant in understanding their nutritional status, but these factors are uncontrollable. However, these can be used as a basis when conducting nutrition programs.
- Household factors such as size and wealth quintile are significant and are indicators of the household's capability to acquire and capacity to share resources
- Having an employed mother with higher years of schooling has a positive impact on one's nutritional status

RECOMMENDATIONS

- Strengthen nutrition programs in the country and complement them with educational, livelihood, and family planning programs
- Include other factors that explain a child's access to nutritious food and explore other variables that can explain a child's intake of safe drinking water
- Explore regional or provincial determinants which can aid in large-scale or area-specific programs for reducing undernutrition

Maraming Salamat!

#ForTheFilipinoChildren