

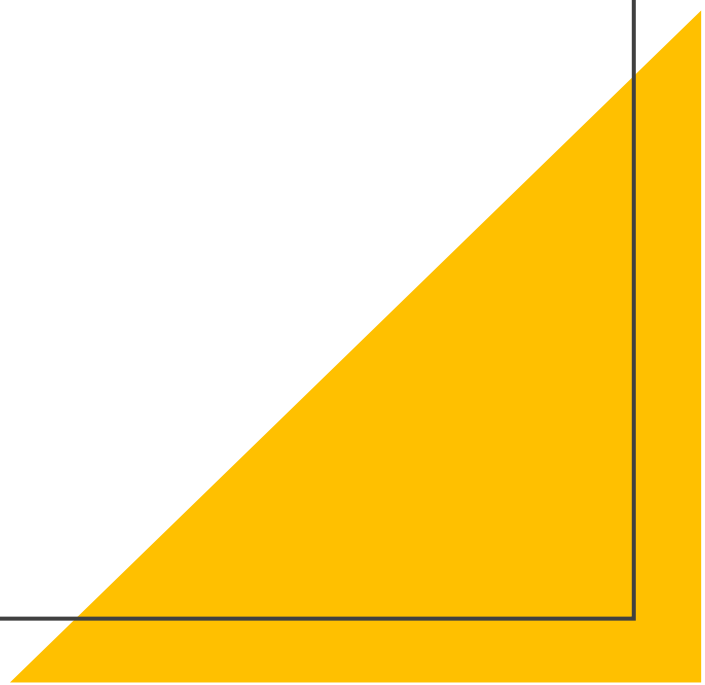
Macro- and Micronutrient Intake in Children aged 12-23 Months in Lao PDR: A Community-cased Cross-sectional Study

Souksamone Thongmixay

PhD, MPH, MD,

Department of Health Promotion and Nutrition, Faculty of Public Health, UHS

Date 5/3/2024

A large yellow triangle is positioned in the bottom right corner of the slide, pointing towards the top right.

Introduction

- Child malnutrition is a persistent problem in Lao PDR
- Stunting, indicating chronic undernutrition, increases during the transition from exclusive breastfeeding to complementary feeding period
- In Lao PDR, 38% of children are introduced to complementary foods too early, while 55% of children aged six months to 2 years do not have a sufficiently diverse diet. These can vary between urban and rural areas.
- These suboptimal infant and young child feeding (IYCF) practices can lead to inadequate intake of macro- and micronutrients, which can affect children's growth and development across the life course
- However, there is limited data on nutrient intakes in Lao infants and young children
- Therefore, we conducted a cross-sectional assessment of nutrient intakes in children aged 12-23 months in the community of Vientiane province

Method

Study design	Community-based, cross-sectional survey
Study area	Vientiane Province (Phonhong and MeangFeung Districts)
Sampling method	Two stages of cluster sampling with children as the cluster unit
Respondents	189 mothers or caregivers of 12–23-month-old children
Study tool	Structured questionnaire - Socio-demographic characteristics of household, parents, and children - Complementary feeding practices for children aged 12–23 months - Dietary assessment using 24-hour recall: child intake as reported by mother/ caregiver
Statistical analysis	- Data were entered into MS Excel and analyzed using SPSS 22 and Stata 17 - Nutrient intakes were calculated using INMUCAL-Nutrients version 4.0

Demographic Characteristics

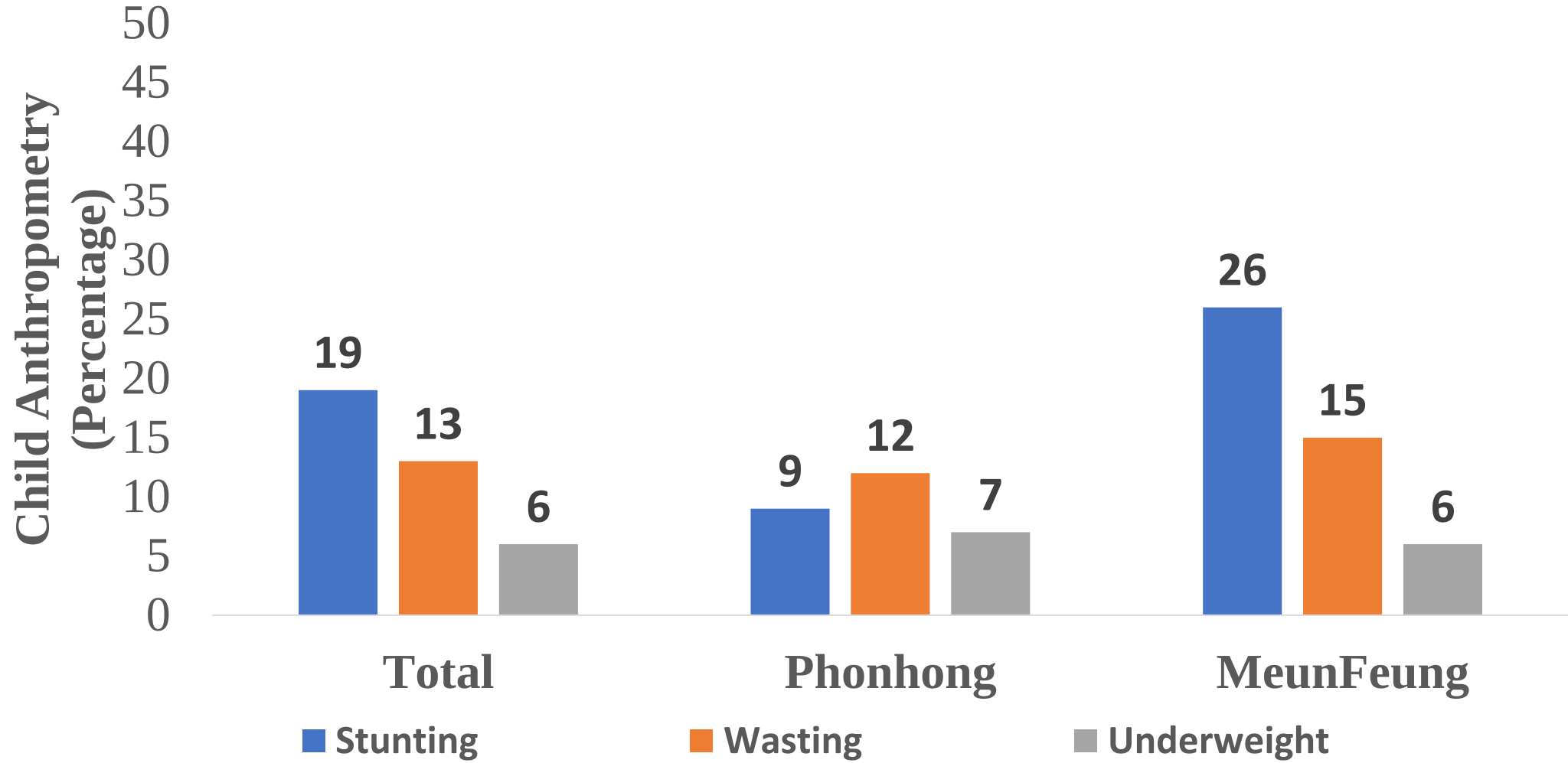
Variable	Total (Mean± *SD/Percentage)	Phonhong (Mean± SD/Percentage)	MeungFeung (Mean± SD/Percentage)
Age of child (months)	19±4	19±4	19±4
Age of mother (years)	29±6	30±5	29± 6
Ethnicity of Mother			
Lao	62	77	51
Hmong-Mien	17	2	29
Mon-Khamer	21	21	20
Education of Mother			
Illiterate (No formal education)	6	1	11
Primary school	6	3	9
Secondary/High school	46	33	55
More than college	42	63	25

*SD Standard Deviation

Social demographic characteristic (Contnd.)

Variable	Total (Mean±SD/Percentage)	Phonhong (Mean±SD/Percentage)	MeungFeung (Mean±SD/Percentage)
Occupation of Mother			
Unemployed	27	24	28
Farmers	33	14	50
Worker/Labour	18	31	7
Officer	19	28	12
Student	4	3	3
Household food security	85	93	78
Child Anthropometry			
Height -for –age Z score	-1.05±1.15	-0.66±1.16	-1.37±1.05
Weight -for –high z score	-0.86±1.13	-0.67±1.20	-1.02±1.05
Weight-for- age- Z score	-0.48±1.14	-0.49±1.22	-0.47±1.07

Stunting was higher in MeunFeung compared to PhonHong



IYCF practices

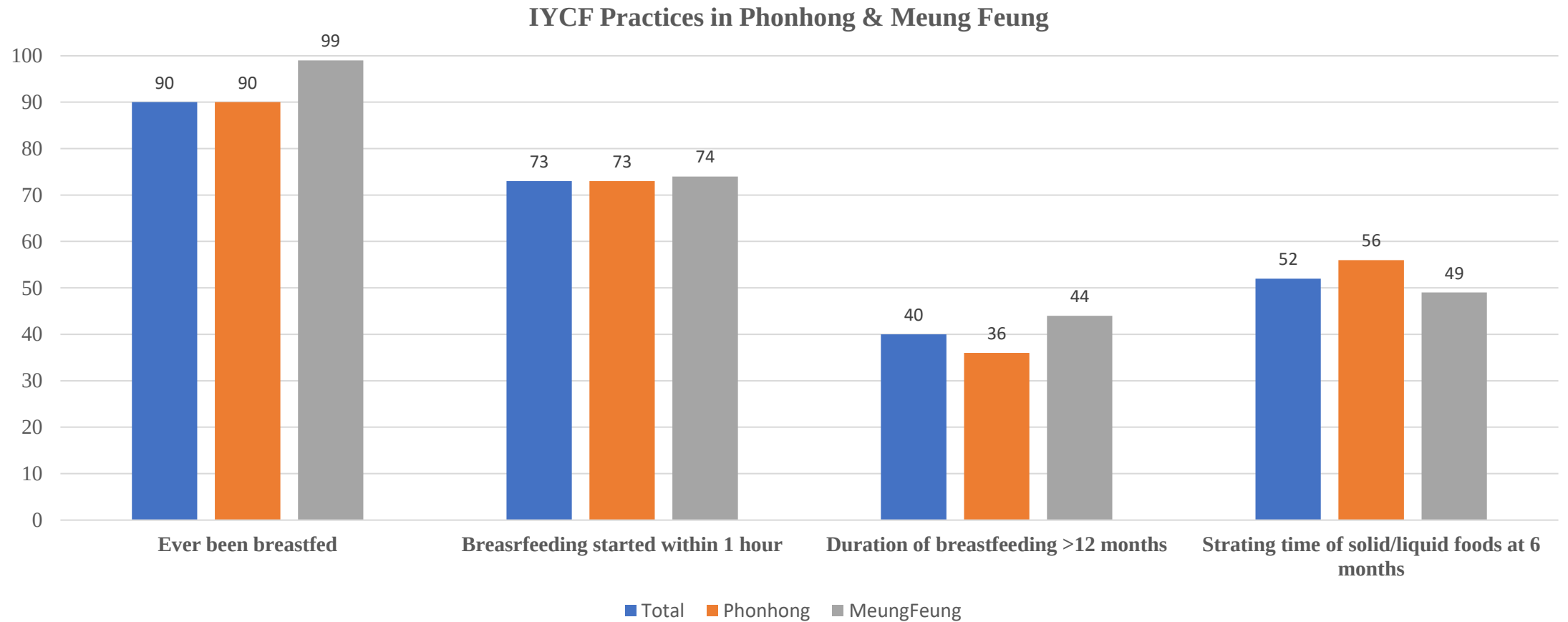


Table 2: Nutrient Adequacy Ratios(NARs)

Nutrient	Intake Median (Q1, Q3)	Recommend ed nutrient intake (RNI)/DRI	Nutrient adequacy ratio (NAR) Median (Q1, Q3)	Phonhong Median (Q1, Q3)	MeangFeung Median (Q1, Q3)
Macronutrient					
Energy (Kcal/kg/d)	88.76(69.10, 106.46)	82	1.09 (0.85,1.39)	1.19 (0.85, 1.31)	1.19 (0.85, 1.31)
Carbohydrate (g/kg/d)	114.94 (89.69, 154.22)	130	0.88 (0.68, 1.18)	0.97 (0.69, 1.18)	0.78 (0.82, 1.31)
Protein (g/d)	31.05 (23.46, 42.58)	14.5	2.14 (1.61, 2.93)	3.61 (2.31, 4.10)	2.63 (2.70, 4.30)
Micronutrient					
Vitamin A (µgRE/d)	401.3 (145.44, 589.28)	285.71	0.52(0.22, 0.92)	0.58 (0.22, 0.92)	3.29 (0.28, 1.02)
Vitamin C (mg/d)	16.53 (4.12, 37.68)	30	0.55 (0.13, 1.25)	0.85 (0.14, 1.22)	0.42 (0.13, 1.90)
Thiamine (mg/d)	0.41 (0.23, 0.59)	0.5	0.82 (0.46, 1.18)	0.94 (0.47, 1.19)	0.67 (0.64, 1.35)
Riboflavin(mg/d)	0.68 (0.28, 1.52)	0.5	1.36 (0.56, 3.04)	2.05 (0.58, 3.04)	0.86 (0.87, 3.48)
Vitamin B6(mg/d)	0.12 (0.05, 0.24)	0.5	0.24 (0.10, 0.48)	0.29 (0.10, 0.48)	0.23 (0.07, 0.61)
Iron (mg/d)	4.30 (2.9, 6.0)	11.6	0.37 (0.25, 0.51)	0.43 (0.26, 0.52)	0.32 (0.31, 0.65)
Zinc (mg/d)	3.12 (2.08, 4.94)	8.3	0.37 (0.25, 0.59)	0.45 (0.25, 0.60)	0.22 (0.32, 0.67)
Calcium (mg/d)	400.10 (111.5, 640.5)	500	0.43 (0.22, 1.28)	0.89 (0.22, 1.28)	0.28 (0.30, 1.64)

Conclusion

- While young children in Vientiane Province have a relatively good intake of macronutrients, their intake of **micronutrients is less** adequate, particularly for **iron, zinc, calcium, and vitamins A, B6, and C**
- Prevalence of stunting, indicating chronic undernutrition and **inadequacy of multiple micronutrients**, was higher in rural Meung Feung compared with urban Phonhong
- Many children in Laos may face poor nutrition, with **higher rates in rural areas**
- Context-appropriate **interventions** are needed to improve **infant and young child feeding practices to improve nutrient intakes**



Thank you!

Contact info: souksamone_yod@yahoo.com

This work was made possible through support from USAID as a supplement to a USAID Cooperative Agreement #7200AA18CA00009 (LASER-PULSE) to Purdue University. Contents reflect the views of the authors and do not necessarily reflect those of USAID.