Child Malnutrition & Intervention Planning: Insights from West Bengal

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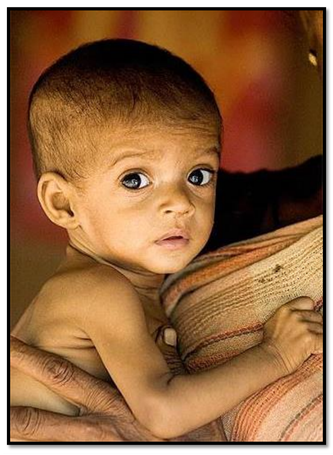
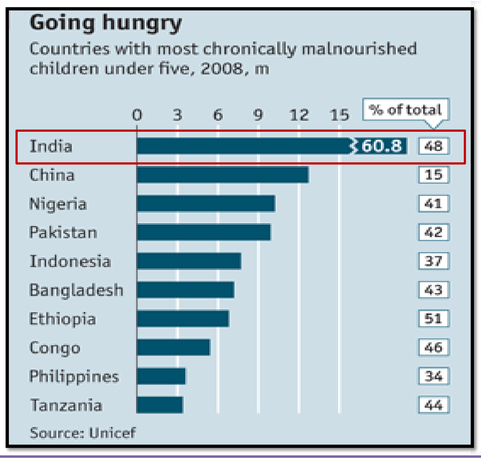
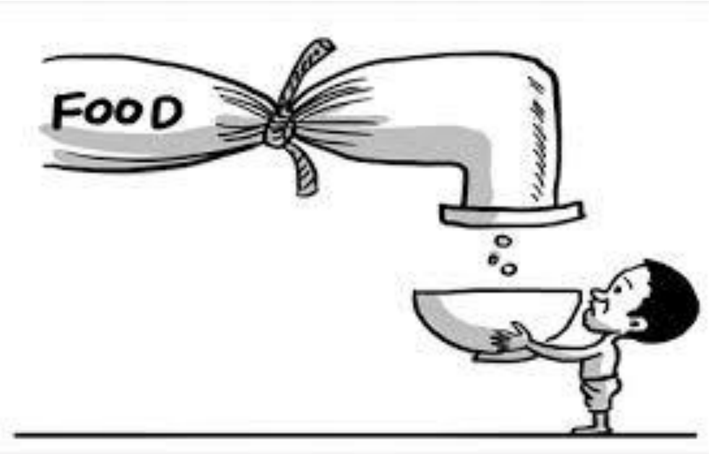
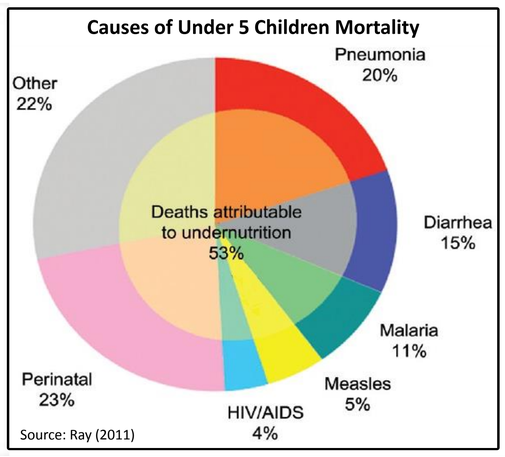








Abstract

Evaluates a child malnutrition intervention programme in West Bengal to (a) assess effectiveness of early intervention & (b) identify external factors that influence effectiveness. Using a unique dataset of pre- & post-intervention data on 95 children, concludes effectiveness is highest when intervention is early & regular, mother is younger & family's socio-economic status is better. Important from a policy perspective since these results suggest programme design needs to improve – be more inclusive and tailored to socio-economic status.

Background

Malnutrition caused by insufficient supply of nutrients

Affects brain development, immune system & physical growth

Diminishes learning & earning capacity, Increases susceptibility to infection & disease

One of world's (& India's) most serious yet least addressed issues

Indian IMR[1]↓ from 250/1000 in 1960 to 76/1000 in 2006; yet a high IMR country

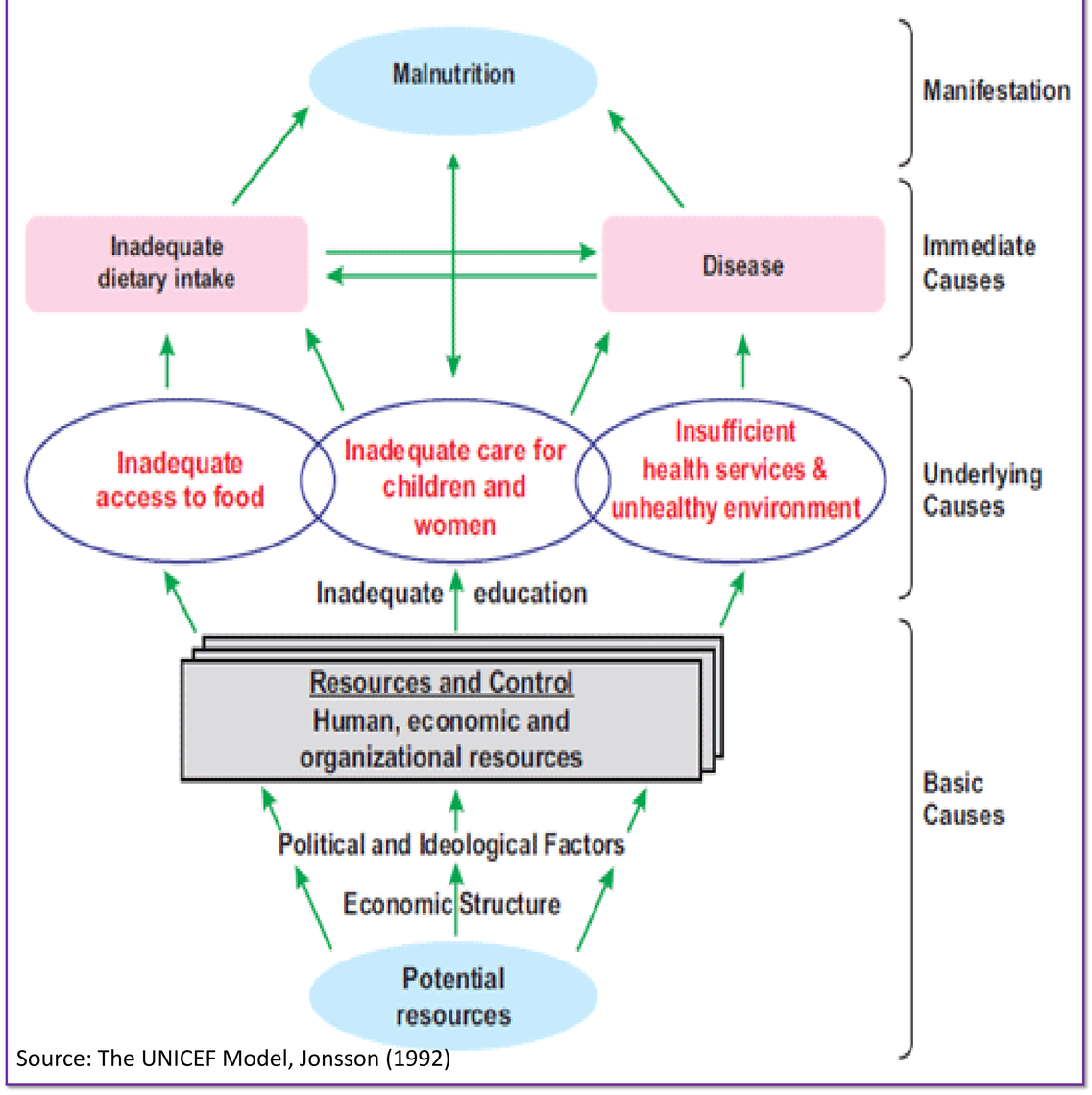
Indian child health situation worse than many poorer sub-Saharan Africa countries

1 out of every 4 children in India suffer from chronic malnutrition

Many public & private interventions initiated but status quo unchallenged

Data availability also a major setback for evaluation of & learning from programmes

Causal Framework for Childhood Malnutrition



Source: The UNICEF Model, Jonsson (1992)

Data

- **Data source:** Early childhood intervention programme at West Bengal; Includes 6 villages & 1 municipality; Public-private venture between CDPO[2] & Amrita Seattle, a non-profit organisation based out of Seattle; Covers 170 malnourished children between 0-6 years; Final sample: 95
- **Key variable:** Change in health status over 6 months of intervention; Measured using BMI-for-age; Use of WHO's Child Growth Standards
- **Other variables:** Engle et al. (2007)

Child characteristics	Age of intervention, gender, immunization status
Mother's characteristics	Age, Prior deliveries
Family characteristics	Economic status (BPL or not), social status (general caste or not)
Others	Intervention regularity

- **Descriptive Statistics:**
  - Average age of intervention is 2.5 years
  - 67% girls; 62% BPL; 9% general caste
  - >50% regularly attended camp; >50% immunized with at least 12 of 14 vaccines
  - For > 50%, health status deteriorated in spite of intervention

Results

- **Correlations:** Improvement in health positively correlated with economic & social status & negatively correlated with age of intervention
- **Univariate:** 11% show improvement in health status[3]; Health improves when intervention is early, mother's age is lesser & intervention is regular; Quantity of supplement consumed insignificant
- **Regression:**
  - Dependent: Change in child health status
  - Findings:

Explanatory Variable	Expected	Actual	Significant
Intervention age	-	-	*Yes*
Female	-	-	No
Immunization	+	+	No
Mother's age	-	-	*Yes*
Prior deliveries	?	+	No
BPL	-	-	No
General caste	+	+	*Yes*
Intervention regularity	+	+	*Yes*

Conclusion, Limitations & Recommendations

Conclusion: Early intervention increases effectiveness; Disparity in socio-economic status not only a macro-level concern since deeply entrenched, found even in microzones like geographical area studied here; Mother's health & involvement during & post child birth significant attributes; Programme continuity crucial from both ends – provider & receiver

Limitations: Data unavailability on family education & income slabs; Lack of control on data collection leading to loss of observations

Recommendations: Increasing effectiveness requires changing the way intervention programmes are designed & conducted; Programmes need to be proactive and inclusive since familial factors influence significantly; Socio-economic status a key to effective intervention & needs to be incorporated into programme design

Notes & References

Notes: 1. Infant Mortality Rate; 2. Child Development Project Officer; 3. Significantly different from zero at 1% level of significance

References: Ray, S. K., 2011, 'Evidence-based Preventive Interventions for Targeting Under-Nutrition in the Indian Context', Indian Journal of Public Health, Vol. 55, Issue 1, pp. 1-6; Jonsson, U., 1992, 'Nutrition and Ethics', Paper presented at meeting on Nutrition, Ethics, and Human Rights, Norwegian institute of Human Rights, Oslo; Engle, P., Black, M., Behrman, J.,…. & The International Child Development Steering Group, 2007, 'Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world', Lancet, Vol. 369, pp. 229-242.

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