Childhood Stunting: Context, Causes and Consequences

WHO Conceptual framework

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Consequences of Inadequate Complementary Feeding

**Concurrent problems & short-term consequences**

- **Health**
  - ↑ Mortality
  - ↑ Morbidities

- **Developmental**
  - ↓ Cognitive, motor, and language development

- **Economic**
  - ↑ Health expenditures
  - ↑ Opportunity costs for care of sick child

**Long-term consequences**

- **Health**
  - ↓ Adult stature
  - ↑ Obesity and associated comorbidities
  - ↓ Reproductive health

- **Developmental**
  - ↓ School performance
  - ↓ Learning capacity
  - Unachieved potential

- **Economic**
  - ↓ Work capacity
  - ↓ Work productivity

**Inadequate practices**

- Delayed initiation
- Non-exclusive breastfeeding
- Early cessation of breastfeeding

**Poor quality foods**

- Poor micronutrient quality
- Low dietary diversity and intake of animal-source foods
- Anti-nutrient content
- Low energy content of complementary foods

**Inadequate practices**

- Infrequent feeding
- Inadequate feeding during and after illness
- Thin food consistency
- Feeding insufficient quantities
- Non-responsive feeding

**Food and water safety**

- Contaminated food and water
- Poor hygiene practices
- Unsafe storage and preparation of foods

**Inadequate Complementary Feeding**

- **Health**
  - ↑ Mortality
  - ↑ Morbidities

- **Developmental**
  - ↓ Cognitive, motor, and language development

- **Economic**
  - ↑ Health expenditures
  - ↑ Opportunity costs for care of sick child

**Consequences**

- Stunted Growth and Development

**Causes**

- **Household and family factors**
  - **Maternal factors**
    - Poor nutrition during pre-conception, pregnancy and lactation
    - Short maternal stature
    - Adolescent pregnancy
    - Mental health
    - IUGR and preterm birth
    - Short birth spacing
    - Hypertension
  - **Home environment**
    - Inadequate child stimulation and activity
    - Poor care practices
    - Inadequate sanitation and water supply
    - Food insecurity
    - Inappropriate intra-household food allocation
    - Low caregiver education

- **Inadequate Complementary Feeding**
  - Poor quality foods
  - Inadequate practices

- **Breastfeeding**
  - Inadequate practices

- **Infection**
  - Clinical and subclinical infection

**Context**

- **Political economy**
  - Food prices and trade policy
  - Marketing regulations
  - Political stability
  - Poverty, income and wealth
  - Financial services
  - Employment and livelihoods

- **Health and Healthcare**
  - Access to healthcare
  - Qualified healthcare providers
  - Availability of supplies
  - Infrastructure
  - Health care systems and policies

- **Education**
  - Access to quality education
  - Qualified teachers
  - Qualified health educators
  - Infrastructure (schools and training institutions)

- **Society and Culture**
  - Beliefs and norms
  - Social support networks
  - Child caregivers (parental and non-parental)
  - Women’s status

- **Agriculture and Food Systems**
  - Food production and processing
  - Availability of micronutrient-rich foods
  - Food safety and quality

- **Water, Sanitation and Environment**
  - Water and sanitation infrastructure and services
  - Population density
  - Climate change
  - Urbanization
  - Natural and manmade disasters