Re-Framing Malnutrition in All its Forms

Nutritionism, Ultra-Processed Foods and the Corporate Capture of Nutrition

Dr Gyorgy Scrinis
School of Agriculture and Food, University of Melbourne
WHO Seminar, January 2019
Overview

- Conventional Framing and Definition of Malnutrition in All its Forms
  - Why categorise malnutrition into the 3 forms?
  - Why nutrient-specific definitions of each form of malnutrition?
- The Scientific, Policy and Commercial Consequences of this Framing?
- Food Manufacturing Corporations and Ultra-Processed Foods
  - Corporate capture of the conventional framing of malnutrition
- Alternative Framing of Malnutrition
  - Alternative Definition of Food and Dietary Quality
Nutritional Paradigms

Levels of Engagement with Food

• Nutrients
  – Single nutrients

• Foods
  – Single Food Focus/Reductionism
  – Food Processing

• Dietary Patterns
  – Food combinations, patterns of eating
Nutritionism as dominant paradigm/ideology

Nutritional Reductionism:
• Reductive focus on nutrients
• Reductive interpretation of nutrients

Reductive Focus on Nutrients
• Distracts from overall Quality of Foods and Dietary Patterns
Nutritionism

Reductive Interpretation of Nutrients
• Nutrients decontextualized
• Fragmented understanding of nutrients
• Single-nutrient focus
• Simplification of understanding of nutrients

Reductive Technological Practices
• Fortification
  
  Captured by food industry
• Marketing nutritional profile of foods
## Conventional Framing of Malnutrition

<table>
<thead>
<tr>
<th>Double Burden</th>
<th>Triple Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Under-Nutrition</strong></td>
<td>• Chronic Undernutrition (Hunger)</td>
</tr>
<tr>
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Two primary characteristics of conventional framing of malnutrition

- Nutrient (and Biomarker) Specific Definitions of Malnutrition
- Separate and Distinct Forms of Malnutrition
### Conventional Framing of Malnutrition

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Persistence of Conventional Framing

• Nutrient and biomarker specific definitions have been criticized by some (not all) experts (Calories, Micronutrients, BMI)

• ‘Double-burden’ concept acknowledges co-existence of forms
  • Common & multiple dietary causes
  • Co-existing health consequences in same families/individuals

• ‘Double-duty actions’ concept acknowledges need for common and integrated solutions

• Some (not all experts) now recognize common and interconnected dietary causes, health consequences and dietary and policy solutions

• Yet experts continue to return to and reinforce the conventional definitions and framings
# Alternative Framing of Malnutrition

## Dietary Causes

**Diverse and Interconnected Dietary Causes**
- Inadequate, Poor Quality & Unbalanced Diets
- Nutrients, Foods and Dietary Patterns

## (Non-Dietary Determinants)

## Health Consequences

**Spectrum of Interconnected Health Consequences**
(Diseases, Physiological Conditions and Risk Factors)
- Acute Hunger, Stunting, Wasting, Under-Weight, Anemia, Cardiovascular Disease, Cancer, Diabetes, Over-Weight/ Obesity, etc

## Dietary Solutions

**Common food-based dietary solutions**
- Adequate and Nutritious Diets
- Nutrients, Foods and Dietary Patterns
## History of Malnutrition Framing

- From Hunger to (nutrient-specific) Malnutrition in all its Forms

| Hunger/ Chronic Under-Nutrition (early 20\textsuperscript{th} century) | • Inadequate Energy (Calories)  
• Protein-Energy Malnutrition 1960s (Great Protein Fiasco) |
|---|---|
| Micronutrient Paradigm (early 1990s) | • Hidden Hunger as Distinct from Chronic Undernutrition  
• Acknowledgement of inadequacy of energy measure |
| Over-Nutrition/Obesity (late 1900s) | • Rise in chronic disease/NCDs  
• Obesity Declared and Epidemic and a disease by WHO (1998) - BMI cut-offs |
| Double/Triple Burden | • Double Burden of Malnutrition acknowledged (1990s)  
• Triple Burden (2000s) |
### Nutrient (and Biomarker) Specific Definitions of Each Form of Malnutrition

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<td>• Inadequate Single Isolated Micronutrients — Iron, vitamin A, iodine, zinc, folate</td>
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<td>• BMI (Body Mass Index) — primary indicator</td>
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- **Food Specific Categories**: Whole/Staple versus Processed Foods
- **Disease Specific Categories**: Deficiency-Related versus Chronic Diseases
## Separate and Distinct Forms of Malnutrition

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**BMI:** Body Mass Index
**NCDs:** Non-communicable diseases
**RUTFs:** Ready-to-Use Therapeutic Foods
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Characteristics of Conventional Framing

Primary Characteristics

• Nutrient & Biomarker Specific Forms of Malnutrition
• Separate and Distinct Forms of Malnutrition

Secondary Characteristics

• Dichotomous Categories
• Internally Uniform/ Homogenous Categories of Malnutrition
• Symmetrical Categories
• Linear Temporality
• Ontological Categories
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<th>Over Nutrition</th>
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<td>Too Little</td>
<td>Too Much</td>
</tr>
<tr>
<td>Energy/Calories</td>
<td>Micro-Nutrients</td>
</tr>
<tr>
<td>Deficiency Diseases</td>
<td>Chronic Diseases/ NCDs</td>
</tr>
<tr>
<td>Whole Foods/ Staple Foods</td>
<td>Processed Foods</td>
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## Chronic Undernutrition: Counter Evidence

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<th>(Non-dietary factors)</th>
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<td>Dietary Causes</td>
<td>• Inadequate Energy (Calories/Kj)</td>
<td>• Dietary quantity/energy not independent of dietary quality; eg. Dietary quality and diversity also decline with decline in energy intake</td>
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<tr>
<td>Health Consequences</td>
<td>• Stunting, Wasting, Under-Weight</td>
<td>• Other dietary determinants of stunting/wasting eg. micronutrient deficiencies</td>
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</tr>
<tr>
<td>Dietary/ Medical Solutions</td>
<td>• Increase Energy Intake • Staple foods, RUTFs</td>
<td>• Other health outcomes from lack of food/energy: eg other deficiency diseases, NCDs, susceptibility to infections</td>
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### Micronutrient Deficiencies: Counter Evidence

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<tr>
<td>Dietary Causes</td>
<td>• Inadequate Single Micronutrients</td>
<td>• Multiple micronutrient deficiencies commonly experienced by individuals</td>
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<td>(Non-dietary factors)</td>
<td></td>
<td>• Multiple dietary and non-dietary determinants of deficiency diseases</td>
</tr>
<tr>
<td>Health Consequences</td>
<td>• Micronutrient-deficiency-specific diseases (eg. anaemia)</td>
<td>• anaemia not just caused by iron deficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Micronutrient deficiencies contribute to other diseases</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• eg. stunting, NCDs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fortification/ supplementation often ineffective and potentially harmful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• eg. iron supplementation</td>
</tr>
<tr>
<td>Dietary/ Medical Solutions</td>
<td>• Increase Micronutrients, Supplementation, Fortification, Diversification</td>
<td></td>
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## Over-Nutrition/ Obesity: Counter Evidence

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<th>Malnutritional Status</th>
<th>Conventional Framing</th>
<th>Counter Evidence</th>
</tr>
</thead>
</table>
| **Dietary Causes**    | • Excess Energy (Cal/Kj)  
• Excess Sugar/ Salt/ Fats (processed foods) | • Over-nutrition – what is it?  
• Is obesity a form of malnourishment, or simply one consequence of a poor quality diet?  
  • Not logical to call it a form of malnutrition  
• Obese people may also be micronutrient deficient (Double Burden)  
• Processed foods may also contribute to nutrient deficiencies |
| **(Non-dietary factors)** |  |  |
| **Health Consequences** | • Obesity (BMI)  
• NCDs | • Childhood stunting linked increases risk of later adult obesity (Double Burden)  
• NCDs caused by multiple dietary and non-dietary determinants  
  • eg. nutrient deficiencies |
| **Dietary/ Medical Solutions** | • Decrease Energy & Sugar/Salt/Fats  
• Reformulated processed foods |  |

**Note:** NCDs = Non-Communicable Diseases
Consequences of the Conventional Framing

- *Why does it matter?*

- **Framing of problems** shapes **framing of solutions**

- No scientific/political consensus on appropriate solutions

- Nutrient-specific definitions promote & legitimise nutrient-specific understanding of causes and nutrient-specific solutions

- Separate and discrete forms of malnutrition promote/legitimize separate and distinct solutions

  - Dietary and Technological Solutions
  - Policy Approaches
  - Commercial/ Corporate Interests
## Conventional Dietary Solutions & Techno-Fixes

| Chronic Under-Nutrition | • Increase production & consumption of cheap staple foods  
• Cheap Processed Foods (Cheap Calories)  
• Formulated energy-dense & nutrient-dense foods (RUTFs – eg. Plumpy Nut) |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Micronutrient Deficiencies | • Micronutrient supplements  
• Micronutrient fortified foods – staple foods, processed foods, biofortified crops |
| Over-Nutrition/Obesity | • Reformulated processed foods – reduced sugar/sodium/fats  
• Functional foods  
• Pharmaceuticals |
Conventional Policy Approaches

**Chronic Under-Nutrition**
- Productivist agricultural policies, Green Revolution 2.0
- Increase total food availability, especially staple foods
- Displaces nutritious food production

**Micronutrient Deficiencies**
- Supplementation & fortification prioritized over improved diet quality and reducing socio-economic disadvantage

**Over-Nutrition/Obesity**
- Food reformulation & medicalized interventions prioritized over food supply and access

- Promotion of **Nutrition-Specific** over **Nutrition-Sensitive** interventions
- Technological solutions suggest socio-structural change not required

(De-politicization of Malnutrition)
### Commercial Interests

<table>
<thead>
<tr>
<th>Chronic Under-Nutrition</th>
<th>Benefits producers of commodity crops, commercially-produced RUTFs and cheap processed foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micronutrient Deficiencies</td>
<td>Benefits producers of fortified manufactured foods, biofortified crops, nutritional supplements</td>
</tr>
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<td>Over-Nutrition/Obesity</td>
<td>Benefits producers of reformulated processed foods, functional foods, pharmaceuticals</td>
</tr>
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Food Manufacturing Corporations & Ultra-Processed Packaged Foods
Corporate Nutritional Strategies for Improving Food Products

HARM REDUCTION

Reformulation
- Reduce sugar/sodium/fat/energy
- Reduce ‘artificial’ ingredients

HEALTH ENHANCEMENT

Micronutrient Fortification
- Add micronutrients
- Prevent Micronutrient Deficiencies in low & middle-income countries

Functionalization
- Add functional nutrients/ingredients
- Optimal health, targeted benefits
# Ultra-Processed Food Solutions to Malnutrition

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<tr>
<th>Chronic Under-Nutrition</th>
<th>Cheap Ultra-Processed Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Cheap Calories</td>
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<tr>
<th>Micronutrient Deficiencies</th>
<th>Micronutrient Fortified Ultra-Processed Foods</th>
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<tbody>
<tr>
<td></td>
<td>• Added micronutrients</td>
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<th>Over-Nutrition/Obesity</th>
<th>Reformulated Ultra-Processed Foods</th>
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<tr>
<td></td>
<td>• Less sugar, salt, fat, energy</td>
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<tr>
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<th>Functionalised Ultra-Processed Foods</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>• Target satiety, weight-loss, NCD prevention</td>
</tr>
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Product Reformulation

Nutrient-to-Limit Reformulation

• Reduce single ‘bad’ nutrients:

  *Sugar, Salt, Saturated & Trans-Fat, Calories*

Old versus New Reformulation

• Systematic, product-wide, industry-wide, quiet reformulation
• Industry self-regulation, Exception- *trans*-fats
• Supported by many nutrition experts, governments

Marketing of Reformulation

• Nutrient-reduction claims

Progress and Standards

• Who sets the standards? Industry versus Public Health targets
Limits of Product Reformulation

• Ultra-processed foods are the major source of salt/sugar/fat
  – Technological limits to reduction: salt, sugar, fat as essential ingredients
  – Are levels of reduction meaningful Eg. 30% reduction of salt or sugar
• What types of foods being reformulated?
  – Moderately Processed or Ultra-Processed Foods?
• Are reformulated foods nutritious?
  – Treat sugar, salt, fat as nutrients, not products of processing
  – Substitution with other processed-reconstituted ingredients
    Eg. artificial sweeteners, refined starches
• Politics of Reformulation
  – Alternative to reduced consumption of processed foods
Micronutrient Fortification

• Old versus New Fortification
• Micronutrient Fortification of processed foods to address micronutrient deficiency diseases
  – Iron, Vitamin A, Iodine, Zinc
  – Solution to *Hidden Hunger*

Actively targeting poorest consumers in the South at risk of deficiencies
• ‘Bottom of pyramid’
• Nestlé: Popularly Positioned Products
• Mandatory versus Commercial Fortification
• Emergency food: *Ready to Use Therapeutic Foods*: ‘Plumpy Nut’

Public-private partnerships
• Eg. GAIN, SUN

South Africa - Fortification
Iron fortified at 15%DV/ serving

Hidden hunger- A massive problem

India - Increased Wholegrain
36g wholegrain /serving

Malaysia – Sugar reduction
20% reduction in 2y.
Limitations of Micronutrient Fortification

Framing of Nutritional Deficiencies

• Micronutrient deficiencies defined as due to lack of single nutrients in diet
• Solution: Supplements, Fortified Foods, Biofortification
• Fortification of ‘junk’ foods

Nutritionally-Reductive Technological Practices/ Techno-Fix

• Assumption that micronutrients act in isolation
• Technical rather than socio-economic fix

Politics of Fortification

• Legitimation for increasing processed food consumption/ nutrition transition
• Yet ultra-processed foods in general deficient in micro-nutrients
Functionalization

Adding Functional Nutrients (eg. Omega 3s)
— Functional Ingredients (eg whole grains)

For Optimal Nutrition and Enhanced Health

• For Obesity/ NCD risk reduction
• Targeted health benefits: gut health, satiety, cholesterol
• Personalised nutrition
• Premium markets
• Medical-Nutritional products

Functional Marketing

• Implied or direct health claims
• Government regulations permitting health claims
Limitations of Functionalization

Exaggerated/Misleading Health Claims

• Exaggerated benefits of single nutrient/food consumption
• Benefits claimed for whole/nutritious ingredients/nutrients,
• Yet ultra-processed in general deficient in these ingredients
• Prey on nutritional anxieties and aspirations for optimal health

Corporate funding of nutrition research

• New products, evidence for health claims

Politics of Functionalization

• Used to justify regulations permitting health claims
• Corporate social responsibility claims
Dominant Scientific and Public Health Approaches to Processed Foods & Dietary Health

• Focus on Nutrient Composition
  – Not ingredients, Not processing of ingredients
• Focus on Presence of Bad Nutrients/Ingredients (salt, sugar, fat)
  – Not absence of beneficial nutrients/ingredients
• Focus on Reducing Harmful Components,
  – Not creating Nutritious Products
• Focus on Single Food Products
  – Not Dietary Patterns, or Company Portfolios
• Focus on impact of UPFs on Obesity/ NCDs
  – Not nutritional deficiencies, ‘optimal’ health
• Focus on Direct Nutrition and Health Impacts
  – Not indirect impact on dietary patterns and health
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Redefining Dietary Quality and Adequacy

**Nutrients**
- Nutrient adequacy
- Nutrient profile, not isolated nutrients
- Intrinsic versus Synthetic Nutrients

**Foods**
- Food Type and Quality
- Level of processing (whole, refined, ultra-processed foods)
- Nutritious foods versus Non-nutritious/ harmful foods

**Dietary Patterns**
- Dietary Diversity and Balance of food groups
- Quantity of each food group
Other Ways of Quantifying of Dietary Quality and Sufficiency

• Minimum Dietary Diversity Score for Women
  • Based on 10 food groups

• Food Security Experience Survey
  • Quantifying number of people who self-identify as food insecure
  • Used in FAO State of Food Insecurity 2018 report
Thank you