Addressing double burden of malnutrition & enhancing nutrition security

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Undernutrition in U-5 children
Anthropometric indicators

Mean HAZ score improved by 0.4 SD

World Bank estimate: Real per capita GDP doubled

Figure 1: Height-for-age of Indian Children by Age, Relative to Healthy Children


(Coffey & Spears, EPW, 2018)
Prevalence of pre-diabetic status in adolescents (10-19 y)
(Fasting plasma glucose: >100 &≤ 126 mg/dl)

(CNNS 2016-18)
6-23 mo children receiving minimum acceptable diet (%)
(CNNS 2016-18)

Minimum Acceptable Diet – Minimum meal frequency + minimum diet diversity

Children (6-23 mo) receiving MAD (NFHS 4)
Breastfeeding children : 9%
Non- Breastfeeding children : 14%
Food System

Market ——> Agriculture

Food Supply Chain ——> Food Environment ——> Consumer Behaviour

Food Availability ——> Food Affordability ——> Food Access ——> Knowledge & Belief ——> Desirability

Sub-optimal diets with low intake of foods rich in high quality protein & micronutrients

Maternal undernutrition/anaemia ——> Childhood undernutrition/anaemia ——> High fat/low muscle mass body composition in adulthood ——> Higher risk of chronic diseases
Food environment

↑ Availability of highly processed, easily transportable & storable convenience foods

Nutrient dense foods:

• Require infrastructure investments (e.g. cold chains) & confined to fresh markets
• Highly seasonal
System of Promoting Appropriate National Dynamism for Agriculture & Nutrition

Integrated survey on agriculture & nutrition in 4000 HHs from Bihar & Odisha

ICMR-NIN & IGIDR, Mumbai

<table>
<thead>
<tr>
<th></th>
<th>Bihar</th>
<th>Odisha</th>
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<tbody>
<tr>
<td><strong>Food insecurity (% HH)</strong></td>
<td>4.7%</td>
<td>4.4%</td>
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<tr>
<td>Underweight</td>
<td>35%</td>
<td>32%</td>
</tr>
<tr>
<td>Stunting</td>
<td>39%</td>
<td>31%</td>
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<tr>
<td>Anemia</td>
<td>89%</td>
<td>75%</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Food Groups</th>
<th>Expenses (Rs)</th>
<th>%</th>
<th>Expenses (Rs)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals &amp; Millets</td>
<td>230</td>
<td>18</td>
<td>173</td>
<td>16</td>
</tr>
<tr>
<td>Pulses</td>
<td>77</td>
<td>6</td>
<td>75</td>
<td>7</td>
</tr>
<tr>
<td>GLVs</td>
<td>30</td>
<td>2</td>
<td>53</td>
<td>5</td>
</tr>
<tr>
<td>Roots &amp; Tubers</td>
<td>116</td>
<td>9</td>
<td>111</td>
<td>10</td>
</tr>
<tr>
<td>Other Vegetables</td>
<td>97</td>
<td>8</td>
<td>155</td>
<td>14</td>
</tr>
<tr>
<td>Spices/Nuts/Oil Seeds</td>
<td>50</td>
<td>4</td>
<td>42</td>
<td>4</td>
</tr>
<tr>
<td>Fruits</td>
<td>127</td>
<td>10</td>
<td>105</td>
<td>10</td>
</tr>
<tr>
<td>Oils</td>
<td>75</td>
<td>6</td>
<td>44</td>
<td>4</td>
</tr>
<tr>
<td>Fish</td>
<td>70</td>
<td>6</td>
<td>66</td>
<td>6</td>
</tr>
<tr>
<td>Poultry &amp; Meat</td>
<td>76</td>
<td>6</td>
<td>74</td>
<td>7</td>
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<tr>
<td>Milk &amp; products</td>
<td>153</td>
<td>12</td>
<td>68</td>
<td>6</td>
</tr>
<tr>
<td>Outside foods &amp; Beverages</td>
<td>151</td>
<td>12</td>
<td>123</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1252</strong></td>
<td></td>
<td><strong>1088</strong></td>
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Main objective: To assess the consumption pattern of food & food products/items high in fat, salt and sugar, from organized and unorganized sectors
STUDY SITES

- Data collection: 2019-21
- 16 study sites
- 4000 HHs per site
- 4,00,000 individuals (> 6 years)
CONSUMPTION OF HFSS FOODS (PAST ONE WEEK)

Indian Snacks included items like samosa, kachori, tikki, chaat, pakora, etc
Samosa: India's Beloved Snack
Consumption highest in Kanpur followed by Bhubaneswar, Bhopal & Rishikesh

<table>
<thead>
<tr>
<th>State</th>
<th>Total fat</th>
<th>Salt</th>
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<tbody>
<tr>
<td>Kanpur</td>
<td>15.18</td>
<td>2.18</td>
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<tr>
<td>Bhubaneswar</td>
<td>20.25</td>
<td>1.74</td>
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<tr>
<td>Assam</td>
<td>22.82</td>
<td>1.95</td>
</tr>
<tr>
<td>New Delhi</td>
<td>19.27</td>
<td>1.70</td>
</tr>
<tr>
<td>Nagpur</td>
<td>11.61</td>
<td>2.92</td>
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</tbody>
</table>
# ANALYSIS OF NUTRITIVE VALUES OF COMMONLY CONSUMED HFSS FOODS

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Total free sugars (g/100g)</th>
<th>Total fat (g/100g)</th>
<th>Salt (g/100g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUNDI</td>
<td>36.81</td>
<td>13.32</td>
<td>0.17</td>
</tr>
<tr>
<td>SEV BESAN</td>
<td>0.97</td>
<td>47.84</td>
<td>1.73</td>
</tr>
<tr>
<td>PICKLE</td>
<td>0.01</td>
<td>9.76</td>
<td>20.92</td>
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#Highest for total free sugars, total fat and salt content among 302 foods collected and analyzed
Initiatives taken by the government to prevent consumption of HFSS food

- Eat Right Movement by FSSAI to create mass awareness about healthy diets
- **Aaj Se Thoda Kam** campaign initiated by FSSAI to create mass awareness on the need for less sugar, salt and fat intake.
- ICMR conducts community awareness programmes and exhibitions in which these topics are dealt with
- ICMR POSHAN Abhiyaan e-modules have dedicated sessions on healthy diets and NCDs
Initiatives taken by the government to prevent consumption of HFSS food

- Food Safety and Standards (Safe food and balanced diets for children in school) Regulations, 2020:
  ‘No person shall advertise or market or sell or offer for sale including free sale, or permit sale of, food products high in saturated fat or trans-fat or added sugar or sodium in school campus or to school children in an area within fifty meters from the school gate in any direction’.

- FSSAI: Front of Pack labelling System (Indian Nutrition Rating based on health star rating system) to indicate the healthiness of the pre-packaged foods.

- FSSAI’s steps to limit industrial trans fatty acids in edible oils and fats, and food products with edible oils and fats as ingredients to a maximum of 2% by weight
NCERT, in partnership with UNESCO New Delhi, has produced 11 animated videos that focus on the 11 themes of the School Health program under Ayushman Bharat.
Diets and eating behaviours are influenced by many factors

**INDIVIDUAL**
- Food preferences and enjoyment
- Beliefs, attitudes, values, perceptions
- Knowledge, skills
- Empowerment

**FAMILY/GROUP**
- Cultural and social practices
- Social support
- Networks
- Peer influence

**COMMUNITY/INSTITUTIONAL**
- Rules, informal structures
- Childcare organisations
- Workplaces, schools
- Neighbourhoods, shops, restaurants
- Community organisations
- Information available
- Recreational facilities, parks

**NATIONAL**
- Health care system
- Food assistance programmes
- Food and agricultural systems
- Political and social structures
- Media
- Social and cultural norms

*Food and Nutrition Education works at all these levels*

(FAO 2016)
Healthy nutritious snacks: product development sector

- High demand for convenience foods
- Vacuum in market – healthy nutritious snacks
- Food processing sector needs to address growing needs with measures to retain nutrients

Concerns:

- High Cost
- Fear of replacing fresh foods
- Low consumer awareness: lack of nutrition literacy, food labelling.

Need to increase market availability of nutrient dense foods: need for strengthening markets & value chains for perishables nutrient dense foods like meat, milk, vegetables & fruits
THANK YOU