Maternal Nutrition in Bangladesh: Achievements and Challenges

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Mainstreaming Nutrition Initiative

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Outline of Presentation

- Trends in maternal nutrition in Bangladesh
- Anemia, vitamin A status during pregnancy
- Reasons for the changes
- Programmatic constraints
- Solutions
CED of Women – Trends in Bangladesh

Percent of women with BMI <18.5

- 1996-97: 52.0%
- 1999-2000: 45.4%
- 2004: 34.3%
- 2007: 29.7%
Effects of low Body Mass Index

- Suffer more from illnesses
- Have impaired work capacity
- Reduced social activity
- Have lower income
- Suboptimal child care

Shetty PS, James WPT 1994
Determinants of CED of Women in Bangladesh, BDHS 2007

- Urban: 20
- Rural: 33
- No edu Grade 10: 38
- Lowest Q: 43
- Highest Q: 13
Factors predicting CED among women in Bangladesh

Ahmed SM 1998

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds ratio</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–24</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>25–34</td>
<td>1.11</td>
<td>0.561</td>
</tr>
<tr>
<td>35+</td>
<td>2.08</td>
<td>0.000</td>
</tr>
<tr>
<td>Years of schooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>1–5</td>
<td>0.66</td>
<td>0.002</td>
</tr>
<tr>
<td>5+</td>
<td>0.48</td>
<td>0.000</td>
</tr>
<tr>
<td>Total living children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 2</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>3–4</td>
<td>0.96</td>
<td>0.786</td>
</tr>
<tr>
<td>5+</td>
<td>0.75</td>
<td>0.124</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Better off</td>
<td>0.77</td>
<td>0.030</td>
</tr>
<tr>
<td>No. times married</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>More than once</td>
<td>1.41</td>
<td>0.115</td>
</tr>
</tbody>
</table>
Subclinical Vitamin A Deficiency in Women and Adolescent Girls

Serum retinol <1.05 µmol/L

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>11</td>
</tr>
<tr>
<td>1994</td>
<td>30</td>
</tr>
<tr>
<td>1996</td>
<td>56</td>
</tr>
<tr>
<td>2006</td>
<td>32.6</td>
</tr>
</tbody>
</table>

Ahmed F 1998; Lee V 2008
Subclinical Vitamin A Deficiency in Women and Adolescent Girls

Serum retinol < 1.05 μmol/L

Only 20% of mothers receive VAC within 6 weeks of delivery

Ahmed F 1998; Lee V 2008
Anemia Prevalence Trends in Bangladesh

Percent

2001 2003 2004

Infant
Adolescent
Pre school
NPNL women
Pregnant Women
Lactating Women

74.1
48.3
46.7
35.1
33
30

92
67.9
46
46
38.8

NSP 2004, Anemia prevalence survey UNICEF/BBS
2003, NSP 2002, WHO global database on anemia
There has been some improvement but more is required
Achievements in Maternal and Child Nutrition are many….

- Reduction in child & maternal undernutrition
- Increase in land acreage and yield
- Home grown cadre of nutrition ‘activists’
- Nutrition Task Group at the MOHFW
- MN including VA & zinc for treatment of diarrhea
Contextual Factors also Contributed to the Achievements

• Increase in literacy, particularly among women
• Reduction in family size
• Rural electrification
• Road communication
• Microcredit movement
Adult Literacy has Increased

Families in Bangladesh are now smaller

Number


5.64 5.75 5.32 4.9

## Poverty reduction in Bangladesh

<table>
<thead>
<tr>
<th>Per capita consumption in kcals</th>
<th>1995-96</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;2122 kcal Absolute poverty</td>
<td>45%</td>
<td>43%</td>
</tr>
<tr>
<td>&lt;1805 kcal Hard core poverty</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>&lt;1600 kcal Ultra poverty</td>
<td>14%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Bangladesh Bureau of Statistics 2003
The Increase of Microcredit Coverage

Borrowers in millions

www.asa.org.bd
## Effect of Microcredit Membership on Health Care Seeking Behavior

<table>
<thead>
<tr>
<th>Service</th>
<th>NGO credit membership</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraceptive use</td>
<td>1.533</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Use of satellite clinic</td>
<td>2.423</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Use of static clinic for EPI</td>
<td>1.539</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Use of static clinic for minor illness</td>
<td>1.613</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Use of static clinic for major illness</td>
<td>1.010</td>
<td>NS</td>
</tr>
<tr>
<td>Use of static clinic for nutritional supplements</td>
<td>1.597</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Amin R, 2001
## Food Balance Sheet in Bangladesh

<table>
<thead>
<tr>
<th></th>
<th>Rice</th>
<th>Wheat</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic availability</td>
<td>32,349</td>
<td>1,840</td>
<td>33,688</td>
</tr>
<tr>
<td>Total production</td>
<td>28,849</td>
<td>840</td>
<td>29,188</td>
</tr>
<tr>
<td>Total utilization</td>
<td>33,226</td>
<td>4,033</td>
<td>37,259</td>
</tr>
<tr>
<td>Total Imports</td>
<td><strong>877</strong></td>
<td><strong>2,193</strong></td>
<td><strong>3,070</strong></td>
</tr>
</tbody>
</table>

FAO/WFP crop and food supply assessment mission to Bangladesh: Special Report 2008
Trends in Energy Intake

Energy intake (kcal/person/day)

- Bangladesh
- Malaysia
- Uganda

1979-1981: 2110
1989-1991: 2310
2001-2003: 2200

1979-1981: 2760
1989-1991: 2770
2001-2003: 2870

FAO, 2006
What can we do to control anemia?
## Reasons for Not Taking IFA Tablets Regularly

<table>
<thead>
<tr>
<th>Reasons</th>
<th>N=1741 pregnant women, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side effects (diarrhea, etc)</td>
<td>25.5</td>
</tr>
<tr>
<td>Forget to take</td>
<td>19.5</td>
</tr>
<tr>
<td>Did not consider necessary</td>
<td>16.3</td>
</tr>
<tr>
<td>Lack of supply</td>
<td>12.0</td>
</tr>
<tr>
<td>Do not receive enough tablets</td>
<td>6.1</td>
</tr>
<tr>
<td>Economic constrains</td>
<td>4.5</td>
</tr>
<tr>
<td>Objection of family members</td>
<td>1.9</td>
</tr>
<tr>
<td>Lost tablets</td>
<td>0.2</td>
</tr>
<tr>
<td>Others</td>
<td>7.8</td>
</tr>
</tbody>
</table>

NNP Baseline Survey 2004
• First of all, take lessons from successful programs, eg EPI, vitamin A
• Conduct a nationally representative survey on the recent prevalence & causes of anemia
• Promote factors that will increase coverage of IFA supplementation
  – Effective counseling
  – Sustained supply
  – Appropriate packaging
  – Mass media coverage
  – Trained workforce
• Increase exclusive breastfeeding rates
• Improve complementary feeding practices by using various foods rich in iron
• Consider home-based fortification of CF using micronutrient powder (sprinkles)
• Coordinate efforts of different agencies and the private sector in control of anemia
Huge Problems still Remain

- Very high population density, calamities
- Lack of priority on nutrition
- Not acting at scale
- Inadequate human resources
- Poor accountability – public sector & NGOs
- Poor monitoring & evaluation
- Lack of coordination, vested interests
Interventions during Pregnancy and Lactation

• Anemia affects 40% women during pregnancy and lactation
  – Only 55% women take iron-folic acid tablets during pregnancy
  – Issues related to compliance, adverse effects, stock outs need to be addressed

• Post-partum vitamin A supplementation
  – One in 5 women goes to a health care provider and receives a Vitamin A supplement after child birth
  – Increase post-natal care rates and the quality of care
Service Delivery has to Improve

• Breastfeeding & complementary feeding practices should be improved. This requires improved counseling for behavior change.

• Undernutrition hotspots need special attention
  – Monga-prone areas in the north
  – The coastal belt and char areas
  – Areas in Chittagong & Sylhet divisions with higher prevalence of child malnutrition
  – Rat-infested areas in the Hill Tracts
Service Delivery has to Improve

- The National Nutrition Program provides a good opportunity for improving nutrition
  - Increase coverage from around 25% to 70-80%
  - Need to shift from the current emphasis on food supplementation to improved nutrition through better counseling
Coverage is most important!

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Reduction in deaths</th>
<th>Reduction in stunting</th>
</tr>
</thead>
<tbody>
<tr>
<td>99% coverage</td>
<td>25%</td>
<td>35%</td>
</tr>
<tr>
<td>90% coverage</td>
<td>22%</td>
<td>32%</td>
</tr>
<tr>
<td>70% coverage</td>
<td>17%</td>
<td>27%</td>
</tr>
</tbody>
</table>