Women’s Nutrition

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Importance of Nutrition for Maternal, Newborn and Child Health

• Objective 1: Review the scientific evidence for maternal nutrition intervention

• Objective 2: Review perceptions about maternal nutrition and program implementation in India, Ethiopia and Northern Nigeria.

In collaboration with Tulane University; funded by BMGF
Objective 1: Review the scientific evidence for maternal nutrition interventions

Nutrition interventions during pregnancy and birth weight

Meta-analyses of moderate to high quality studies; all estimates are significant.
Nutrition interventions during pregnancy and low birthweight (LBW)

Meta-analyses of moderate to high quality studies; all estimates are significant.
Nutrition interventions during pregnancy and preterm birth (PTB)

Meta-analyses of moderate to high quality studies; all estimates are significant.
Nutrition interventions during pregnancy and maternal outcomes

Meta-analyses of moderate to high quality studies; all estimates are significant.

IFA$^*$, Vitamin A, Calcium

Anemia

<table>
<thead>
<tr>
<th></th>
<th>% decreased risk</th>
</tr>
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<tbody>
<tr>
<td>IFA$^*$</td>
<td>70</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>20</td>
</tr>
<tr>
<td>Calcium</td>
<td>50</td>
</tr>
</tbody>
</table>

$^*$MMN have similar impact as IFA
Maternal nutrition before and during early pregnancy

- Preconceptional folic acid supplementation reduces birth defects by 72%.

- Observational evidence supports:
  - Positive association between maternal underweight and risk of LBW and IUGR.
  - Early pregnancy anemia and increased risk of PTB and LBW.
  - Urgent need for pre-conception trials
Importance of reproductive factors

- **Early age at first pregnancy**
  \(^\uparrow\) Risk of anemia, LBW, VLBW, preterm birth, early preterm birth, neonatal mortality

- **Short interpregnancy interval**
  \(^\uparrow\) Risk of preterm birth, early preterm birth, LBW, stillbirth and neonatal death

\(^*\) Both factors increase risk of LBW and PTB by **39 to 68%**
Objective 2: Review perceptions about maternal nutrition and program implementation in India, Ethiopia and Northern Nigeria.

Funded by the Gates Foundation:  http://nsinf.publisher.ingentaconnect.com/content/nsinf/fnb/2012/00000033/a00102s1
# Selected indicators of maternal nutrition in Ethiopia, India and Nigeria

<table>
<thead>
<tr>
<th>Women</th>
<th>Ethiopia, 2005 Survey</th>
<th>India, 2005/6 Survey</th>
<th>Nigeria, 2003 Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal mortality ratio (per 100,000)</td>
<td>720</td>
<td>450</td>
<td>1100</td>
</tr>
<tr>
<td>Anemia (Hb &lt; 110g/L) (% pregnant women)</td>
<td>63</td>
<td>50</td>
<td>67</td>
</tr>
<tr>
<td>Low BMI (% &lt; 18.5)</td>
<td>27</td>
<td>36</td>
<td>15</td>
</tr>
<tr>
<td>No antenatal care (%)</td>
<td>72</td>
<td>26</td>
<td>37</td>
</tr>
<tr>
<td>Median age at marriage (y)</td>
<td>16.1</td>
<td>17.2</td>
<td>16.6</td>
</tr>
<tr>
<td>Married women using modern contraception (%)</td>
<td>14</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>Median birth interval (m)</td>
<td>n/a</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Teenage pregnancy (15-19 y, % pregnant or had children)</td>
<td>17</td>
<td>16</td>
<td>25</td>
</tr>
</tbody>
</table>
Urgent need to increase coverage and effectiveness of interventions to enhance women’s nutrition
Other conclusions from our work in countries on maternal nutrition

• Policy and program decision-makers do not, in general, appreciate the important role of maternal nutrition.

• This appears to be due to lack of clear guidance and of consensus on what to do

• Low priority to women’s nutrition results in lack of effective programs to address maternal undernutrition.
Thinness in women is not recognized as an important problem
Perceived anemia prevalence in Bihar, India where 60% of pregnant women are anemic and where 66% of women do not consume any IFA and only 7% consume at least 100 tablets.

Many health workers believe that anemia is rare in their own communities.

- “The percentage is very low. Only a few women have a problem of deficiency of blood.”
  - Auxiliary Nurse Midwife (ANM), Gopalganj

- “Until now not a single patient has come.”
  - Auxiliary Nurse Midwife (ANM), Begusarai

+ Amanda Wendt, ongoing doctoral research
Operational research priorities

- Improve IFA program effectiveness.
- Develop integrated approaches to reach mothers and young children with micronutrient powders.
- Improve targeting and distribution of fortified protein-energy supplements for pregnant and lactating women.
- Develop feasible approaches to deliver calcium to pregnant women.
- Assess effectiveness of staple food fortification (wheat, flour, condiments, etc.) to reduce anemia and micronutrient deficiencies.
Operational research priorities

• Improve the capacity of CHNWs to improve women’s nutrition.

• Exploit all possible platforms to reach women and not just children

• Expand and assess value of cash transfer programs to support women’s nutrition.

• Include nutritional indicators of women in program impact evaluations.
What needs to be done to enhance women’s nutrition to improve MNCH outcomes (adapted from Frances Donay)

1. Discover, develop and introduce new or adapted interventions for home and community (efficacy)

2. Increase demand: mothers and families should be aware of and receptive to care and be able to afford services.

3. Supportive policies must exist and be backed by adequate funding and strong leadership

4. Enhance frontline worker capabilities and performance

Increase coverage and effectiveness of interventions to enhance women’s nutrition and improve maternal neonatal and child health outcomes.
The US Government initiative “Feed the Future” has selected two nutrition indicators for monitoring the success of their country-level initiatives: *child stunting* and *maternal anemia*.

- Increased attention to women in the UN Secretary General Global Strategy on Women’s and Children’s Health and the related “Every Woman Every Child” initiative.
65th WHA (May 2012) endorsed several nutritional targets by 2025, including:

- 40% reduction in stunting in children under 5 years
- 50% reduction in anemia in women of reproductive age
- 30% reduction in LBW

All require an improvement in maternal nutrition
32.4 million babies were born small-for-gestational-age (SGA) in 2011 or 27% of births in low- and middle-income countries (LMICs)

Neonatal and infant mortality is high, not only in those born preterm but in those born term, small for gestational age

20% of stunting by 24 months can be attributed to being SGA
Tendency in thinness and obesity by WHO region (1980-2008)
Key messages

• We have proven interventions to improve women’s nutrition
• There is an urgent need to increase coverage and effectiveness of interventions
• Low priority to women’s nutrition results in lack of effective programs
• However, the importance of women’s nutrition is increasing at global levels