Childhood Malnutrition: Current Solutions and Future Directions

A Focus on Apam Catholic Hospital

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According to the WHO…

- Poor nutrition contributes to 1 out of 2 deaths (53%) associated with infectious diseases among children under age five in developing countries.
- 1 out of 2 children in Africa with severe malnutrition dies during hospital treatment due to inappropriate care.
- 1 out of 4 preschool children suffers from undernutrition, which can severely affect a child's mental and physical development.
- Inappropriate feeding of infants and young children are responsible for one-third of the cases of malnutrition.
Malnutrition...What is it?

- Defined as “the cellular imbalance between supply of nutrients and energy and the body’s demand for them to ensure growth, maintenance and specific functions”
Malnutrition...Who does it affect?

- **113.4 million** children in under age 5 in the world
- Of these...
  - **112.8 million** are in developing countries
  - **26%** are in Africa
  - **Ghana**
    - ~ **36%** of children under age 5 are stunted for growth
    - **18.8%** of children under age 5 are underweight
Malnutrition...How does it affect children?

- Stunted growth
- Impaired immunity
  - Predisposes to infectious disease
- Changes in brain similar to those encountered with severe mental retardation
- Social and behavioral delay
Methods

- Looked at child weights in Apam and compared to WHO Child Growth Standards
  - Based on measurements from a study using over 12,000 children from Brazil, Ghana, Oman, U.S. and India
  - Children enrolled had to be absent of illness, socioeconomic constraints on growth, breastfeeding infants and nonsmoking mothers
Weight Status of A Sample of Children at Apam Catholic Hospital

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th>Males</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight at -2 SD</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Underweight at -3 SD</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Normal</td>
<td>8</td>
<td>16 (1 overweight)</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>24</td>
<td>38</td>
</tr>
</tbody>
</table>
Weight Status of Children- Apam Catholic Hospital

- Underweight at –2 SD
- Underweight at -3 SD
- Normal
- Overweight

24, 62%
9, 24%
4, 11%
1, 3%
Results…ctd.

- 33/38 of children in sample were under age 5
- 10/33 (30.3%) children under age 5 were underweight
Discussion

- Small sample size, so no statistical conclusion can be drawn from this data
- Only weight for age data used; no other anthropometric measures used
  - i.e.- height for age, BMI
Discussion

- According to WHO data in 2003…
  - **26.8%** of children under age 5 in Ghana were underweight for age
  - **25.8%** of children under age 5 in Central region were underweight for age
  - Comparable to **30%** derived in this study
Weight Status of Children Under Age 5 - WHO Data, 2003 (Adapted from WHO Global Database on Child Growth and Malnutrition)

<table>
<thead>
<tr>
<th>Region</th>
<th>Sample Size</th>
<th>Weight/Age -3 SD (%)</th>
<th>Weight/Age –2 SD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>3183</td>
<td>4.7</td>
<td>22.1</td>
</tr>
<tr>
<td>Ashanti</td>
<td>613</td>
<td>4.1</td>
<td>20.9</td>
</tr>
<tr>
<td><strong>Central</strong></td>
<td><strong>284</strong></td>
<td><strong>3.9</strong></td>
<td><strong>21.9</strong></td>
</tr>
<tr>
<td><strong>Greater Accra</strong></td>
<td><strong>337</strong></td>
<td><strong>2.1</strong></td>
<td><strong>11.6</strong></td>
</tr>
<tr>
<td>Northern</td>
<td>415</td>
<td>8.7</td>
<td>35.4</td>
</tr>
<tr>
<td>Upper East</td>
<td>156</td>
<td>7.7</td>
<td>32.5</td>
</tr>
<tr>
<td>Brong Ahafo</td>
<td>356</td>
<td>5.3</td>
<td>20.5</td>
</tr>
<tr>
<td>Eastern</td>
<td>333</td>
<td>3.6</td>
<td>17.4</td>
</tr>
<tr>
<td><strong>Upper West</strong></td>
<td><strong>95</strong></td>
<td><strong>6.3</strong></td>
<td><strong>26.3</strong></td>
</tr>
<tr>
<td><strong>Volta</strong></td>
<td><strong>259</strong></td>
<td><strong>5.0</strong></td>
<td><strong>25.6</strong></td>
</tr>
<tr>
<td>Western</td>
<td>333</td>
<td>3.6</td>
<td>17.4</td>
</tr>
</tbody>
</table>
What factors contribute to malnutrition in these areas?

- In Greater Accra, one study showed that low birth weight and lack of maternal education are risk factors for being underweight.

- Areas for further investigation:
  - Difference between regions in diet
  - Difference between regions in interventions for malnutrition
What is being done to address the problem?

- Nutrition Centre in Apam
  - Rehabilitation for severely malnourished children
  - Outpatient treatment- intensive feeding over a period of months
  - Community education about nutrition and feeding

- Child Welfare Clinic at Apam Catholic Hospital
  - Measures child weights
  - Gives immunizations
What more can be done?

- Further anthropometric measures to include height and head circumference for children under age 3
- Height measurement for older children (in order to calculate BMI)
- Prescription of multivitamin at sick visits for all children (to prevent iron deficiency anemia and other vitamin deficiency)
- Parental education programs
- National public health program to supplement infant feeding
References

Thank you!!!
(Medase)