“Plumpy’Nut”

How acceptable is it for malnourished pregnant & lactating women in a slum setting in Bangladesh?


Medecins Sans Frontieres Brussels – Luxembourg, Bangladesh
International Union against Tuberculosis and Lung disease, Paris, France
London School of Hygiene and Tropical Medicine, London, UK.
The medical relief organization Medecins sans Frontieres (MSF) estimates that at least 1.5 million people are suffering from acute malnutrition.
BANGLADESH
BANGLADESH
Pregnant & Lactating Women

Malnutrition

• Among the highest in the world (30%)

⇒ Adversely affects the health of the mother

⇒ Low birth weight
Kamrangirchar Slum - Dhaka 2010
Population

- Inhabitants: 400,000
- Area: 3.1 km²
- Density: > 100,000/km²
Urban Slum
Poverty
Plumpy’Nut
Ready To Use Therapeutic Food (RUTF)

Ready to Use Therapeutic Food Composition

- Full fat milk (in powder form) 30%
- Sugar 28%
- Vegetable oil 15%
- Peanut butter 25%
- Mineral Vitamin Mix 2%
Africa - Plumpy’Nut
Bangladesh – Lentils

How acceptable is plumpy’nut among pregnant and lactating mothers?
Objectives

In an urban slum setting in Bangladesh to:

Assess the acceptability of Plumpy’Nut among pregnant and lactating women
## Methods (1)

<table>
<thead>
<tr>
<th>Study Design:</th>
<th>Semi-structured questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>May- July 2011</td>
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<tr>
<td>Site:</td>
<td>Kamrangirchar Slum</td>
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<tr>
<td>Study Population:</td>
<td>All Pregnant/lactating women-Malnourished or at risk (6 weeks on PPN)</td>
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</table>
Package of Activities
Methods (2): Screening Community
Methods (3): Screening Primary Care Clinics
**Methods (4): Pregnant & Lactating Women**

### Admission
- Severe acute malnutrition (MUAC <170 mm or nutritional oedema)
- At risk of malnutrition (MUAC <210 mm)

### Discharge
- MUAC > 220 mm
  - Oedema improved
  - No medical complications

**Duration of treatment:** 2-5 months

**Also offered:**
- Antenatal and postnatal care
- Curative care
- Referral
Methods (5)
Community Mobile Outreach
Methods (6)
Health Education / Cooking Demonstrations
Methods (7): Tracing Losses to Follow Up
Methods (8): Plumpy’Nut (PPN) Questionnaire Survey

Socio-demographic information

Acceptability (Perception)
- Taste, Smell, Color, Consistency
- Side effects
- Packaging

Interviews
- 3 trained community workers (Local language)
- Pre-tested Questionnaires

Ethics approval
- MSF & Union
Plumpy’Nut- Acceptable

If women did not perceive any problems of undesirable taste, smell, color, consistency or side effects anytime during the intake
## Results (1)

### Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Total PLW</td>
<td>248</td>
</tr>
<tr>
<td>Age (years, IQR)</td>
<td>20 (18-24)</td>
</tr>
<tr>
<td>Housewives</td>
<td>99 %</td>
</tr>
<tr>
<td>Lactating</td>
<td>209 (84%)</td>
</tr>
<tr>
<td>Income ($ / day)</td>
<td>2.5</td>
</tr>
<tr>
<td>Illiterate</td>
<td>30%</td>
</tr>
<tr>
<td>Duration PPN (weeks)</td>
<td>15 (6-28)</td>
</tr>
</tbody>
</table>
## Results (2) : PPN - Acceptability

<table>
<thead>
<tr>
<th>Reason for Unacceptability</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package instructions not understood</td>
<td>41%</td>
</tr>
<tr>
<td>Did not accept PPN</td>
<td>78%</td>
</tr>
<tr>
<td>Undesirable taste</td>
<td>60%</td>
</tr>
<tr>
<td>Unwelcome smell (Peanut based smell)</td>
<td>43%</td>
</tr>
<tr>
<td>Consistency</td>
<td>13%</td>
</tr>
<tr>
<td>Color</td>
<td>4%</td>
</tr>
<tr>
<td>Attributed side effects: nausea, vomiting, diarrhoea, abdominal distention &amp; pain</td>
<td>39%</td>
</tr>
<tr>
<td>Complete rejection</td>
<td>5%</td>
</tr>
</tbody>
</table>
Results (3) : PPN - Acceptability

- Too salty: 46%
- Too sweet: 51%
- Unfamiliar taste: 3%
- Medicine like smell: 25%
- Peanut smell: 58%
- Unfamiliar smell: 17%

- Unfamiliar taste: 3%
Results (4): Plumpy’Nut Therapeutic Value

212/ 248 (85%) of Pregnant and lactating women perceived PPN to be beneficial
Conclusion (1)

In one of the first studies from South Asia

- Acceptability of Plumpy’Nut in a slum setting was very low

- Eight in ten women do not like PPN for nutritional rehabilitation - a serious concern as PPN is a food product.
  Need for an alternative!

- Nutritional agencies and manufacturers need to intensify efforts towards developing adapted RUTF for the local context.
Conclusion (2)

This study also highlights the important role of operational research in showing that it is not enough to continue doing “more of the same”
Acknowledgements

Many thanks to our patients, the interviewers and the MSF staff working in Kamrangirchar.