Nutritional status and associated factors of under-five years old children from food secure and food insecure households in Rural Communities of Saesie Tsaeda-Emba Woreda, Eastern Zone, Tigray, Northern Ethiopia: A comparative cross sectional study

NNP related research finding dissemination workshop
Oct. 23-25, 2014
Adama, Ethiopia

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Background

• Nutritional status of under-five children is:
  ✓ Important indicator of a household’s living standard
  ✓ Main determinant of child survival (Kanjilal et al, 2013).
• Malnutrition is responsible for nearly half (45%) of all deaths in children under five. (http://dx.doi.org/10.1016/, 2013)
• In 2004, Ethiopia initiated a PSNP (RHVP, 2007)
• Ethiopia is striving for-ward to ensure food security and become food self sufficient.
• **However**, it doesn’t necessarily mean that food secure households are nutritionally secured and;
  ✓ Malnutrition is common in many food secure households (Teshome et al, 2009)
Objectives

• To determine the prevalence of under-nutrition in 6 months to 5 years of age children among food secure households

• To determine the prevalence of under-nutrition in 6 months to 5 years of age children among food insecure households

• To identify the associated factors of under-nutrition in 6 months to 5 years of age children among the food secure HHs

• To identify the associated factors of under-nutrition in 6 months to 5 years of age children among the food insecure HHs
Methods

• Saesie Tsaeda Emba Woreda is PSNP beneficiary
• Data collection period: January 27 - April 1, 2014
• **Study design:** A comparative community CSS
• **Sou. pop.:** All 6 mon. to 5 yrs of age children/woreda
• **Study pop.:** All 6 months to 5 yrs/7 kebelles
  ✓ **IC:** All 6 mon. to 5 yrs of age/data collection period
  ✓ **EC:** With severe illness and deformities
• **Study subjects:** All 6 months to 5 yrs/7 kebelles/IC
• **Sample size determination:** Two pop. prpo. Formula
  ✓ Thus, the total SSs were **860,783 and 180**; with 10% CR f
  ✓ Finally, **860** was taken as study SS
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**methods (Sampling procedure)**

- Tsaeda Emba Woreda (purposely)
- Seven rural kebeles (randomly)
- Households in the 7 rural kebeles stratified into FS & FI HHs using (PSNP eligibility criteria)
- List of 6 months to 5 years of age children
- Total sample size (860) divided equally into two
- Distributed to each the seven kebelles using proportionate allocation
- SS Collected by Syst.RS
Study variables

Socio-economic and demographic factors
- Caretaker r/ship
- Age of mother
- Marital status
- Age of father
- Religion of parents
- Education level of mother
- Education level of father
- Occupation of mother
- Occupation of father
- Head of family
- Family size
- No of cattle in HH
- No of sheep/goat in HH

Child feeding practice factors
- Ever breast fed
- Time of BF initiation
- Frequency of BF
- No of months on BF
- Current BF status
- Colostrums
- Pre-lacteal fed
- Complementary feeding
- Age CF started
- Type of 1st CF
- Frequency of CF
- Method of CF giving

Food security and DD
- Food access in HH
- HDDS for HHs
- IDDS for children

Maternal and child care factors
- ANC attendance
- Place of birth
- Birth attendant
- Child ever weighed
- Child ever vaccinated
- Vaccination card
- Child ever sick
- Type of sickness

Conceptual frame work for causes of malnutrition in children
Developed by: Amaha Kahsay
methods (Data processing and analysis)

Data entered and cleaned by SPSS 20 & anthropometric data by ENA SMART

Descriptive statistics (frequency & crosstabs) was done

Bivariate analysis was done using p-value < 0.25

Collinearity diagnosis was done using the linear reg. model

Enter method standard regression was used for the candidate IVs

Multivariable analysis was done & goodness of fit was checked by Hosmer & Lemeshow p-value > 0.05 & confounders avoided here

finally, IV was set as predictor of the DV at p-value < 0.05 and AOR (95%CI) never cross 1
Results

• Eight hundred forty one (421 from FS and 420 from FI HHs) children:
  ✓ 6 mon. to 5 years of age participated in the study
  ✓ RR of 97.9% for FS HHs and 97.6% for FI HHs

Fig. 3: magnitude of stunting, underweight, and wasting among 6 months to 5 years of age children from food secure and food insecure households of rural communities of Saesie Tsaeda Emba Woreda, Eastern Tigray, 2014
## Results

- **Comparison of prevalence of under nutrition of the current study with EDHS 2011 and targets of NNP 2014/15:**

<table>
<thead>
<tr>
<th>Type of U/nutrition</th>
<th>Current study %</th>
<th>EDHS 2011%</th>
<th>Targets/NNP 2014/15 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stunting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSHHs</td>
<td>46.08</td>
<td>44</td>
<td>33</td>
</tr>
<tr>
<td>CFIHHs</td>
<td>52.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U/weight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSHHs</td>
<td>18.05</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>CFIHs</td>
<td>20.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wasting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSHHs</td>
<td>7.13</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>CFIHHs</td>
<td>12.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Results

### Comparison of prevalence of under nutrition of the current study between the comparative groups:

<table>
<thead>
<tr>
<th>Type of under nutrition of the current study</th>
<th>Prevalence% (95% CI)</th>
<th>AOR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stunting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSHHs</td>
<td>46.08 (41.1, 51.1)</td>
<td>1</td>
</tr>
<tr>
<td>CFIHHs</td>
<td>52.14 (43.1, 52.4)</td>
<td>1.480 (1.101, 1.991)**</td>
</tr>
<tr>
<td><strong>Underweight</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSHHs</td>
<td>18.05 (14.7, 21.6)</td>
<td>1</td>
</tr>
<tr>
<td>CFIHs</td>
<td>20.95 (17.1, 24.8)</td>
<td>0.880 (0.599, 1.294)</td>
</tr>
<tr>
<td><strong>Wasting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSHHs</td>
<td>7.13 (4.8, 9.7)</td>
<td>1</td>
</tr>
<tr>
<td>CFIHHs</td>
<td>12.62 (9.8, 16.2)</td>
<td>2.361 (1.387, 4.020)**</td>
</tr>
</tbody>
</table>
Results

Determinants of child stunting

• Variables that were predictors of child stunting in children from the FS HHs namely:
  ✓ Occupation of the father; AOR: 3.757 (1.431, 9.864) and 3.506(1.178,10.431)
  ✓ Family head; AOR: .278 (.097, .793)
  ✓ Duration of continued breastfeeding; protective

• Whereas, predictors of child stunting in children from the FI HHs were:
  ✓ Age of the child; AOR: 1.636 (1.004, 2.668)
  ✓ Head of the family; AOR: .435 (.191, .994)
  ✓ Duration of continued breast feeding; protective
Results
Determinants of child underweight

- Variables that were predictors of child underweight in children from the FS HHs namely:
  - Educational status of father = **Odds of UW 73.9% lower**
  - Sex of the child = **2.23 times higher**
  - Current breast feeding status of the child = **61.5% lower**

- Correspondingly, predictors of child underweight in children from the FI HHs were:
  - Age of mother = **6.4% lower**
  - Occupational status of father = **88.2% lower**
  - Sex of child = **78.9% higher**
  - 1st complementary food given to the child = **84.3% lower**
  - Main source of water to the household = **2.75X higher**
Results

Determinants of child wasting

• Variables that were predictors of child wasting in children from the FS HHs namely:
  ✓ Age of the father = **Odds of wasting 11% higher**
  ✓ Number of cattle owned by the household = **83.4% lower**

• Likewise, predictors of child wasting in children from the FI HHs were:
  ✓ Age of child = **52.1% lower**
  ✓ Main source of water to the household = **2.95 and 3.54 times higher**
Recommendations

A. To the government at large
• Addressing food security using the locally implemented PSNP

B. To the nutrition sensitive sectors at all levels

Health sector
• Strengthening the health extension package...

Education sector
• Addressing at least primary education to the community

Agriculture sector
• Playing a role in tackling food insecurity by providing...
• Encouraging the community to have and breed productive livestock
Recommendations

Water and energy sector
• Address adequate and safe water for consumption

Industry and trade sectors
• Providing highly nutritious and cost affordable formulas to the community

Women, children and youth affairs sector
• Encourage and empower mother headed families

Labor and social affairs sector
• Attention to be given for children who live in parents who are elderly particularly fathers

To NGOs and other concerned bodies
• Integrate & co-ordinate their nutrition related objectives
Acknowledgments

- My advisors Dr. Afework Mulugeta and Mr. Oumer Seid
- Save the Children/ENGINE
- Mekelle University
- Saesie Tsaeda-Emba Woreda health office and food security task force
- All the study participants and the community
- All the data collectors and supervisors
- All my friends particularly Solomon Teshome and Abate Bekele
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Thank you