Women’s Empowerment in Agriculture and Child Stunting in Nepal: Do Childcare Practices Mediate the Associations?

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Conceptual Framework

Objective: To examine the associations between women’s empowerment in agriculture and LAZ of children 6-24m in rural Nepal and to test whether two childcare practices – feeding and WASH – mediate any found associations.
**Dataset:** Cross-sectional data from baseline survey of *Suaahara*, a USAID-funded multi-sectoral maternal and child nutrition intervention

**Data collection:** June-Oct 2012

**HH interviews:**
- Anthropometry
- Index child’s mother
- Male HH economic decision-maker (father where available)

- 16 districts
- 240 communities
- 1,402 mother-child (6-24m) dyads
Measurement Tool: WEAI

Five domains of empowerment (5DE)

Gender parity Index (GPI)

Women’s Empowerment in Agriculture Index (WEAI)

Source: USAID. OPHI. IFPRI. 2012. Women’s Empowerment In Agriculture Index.
Measurement Tool: WEAI 5DE

Five Domains of Empowerment

Production 1/5
- Ten Indicators
  - Input in productive decisions 1/10
  - Autonomy in production 1/10
  - Ownership of assets 1/15
  - Purchase, sale, or transfer of assets 1/15
  - Access to and decisions on credit 1/15

Resources 1/5
- Control over use of income 1/5

Income 1/5
- Group Member 1/10

Leadership 1/5
- Speaking in Public 1/10

Time 1/5
- Leisure 1/10
- Workload 1/10
Measurement: Child
Dietary Diversity and
household WASH

Child Feeding/Dietary Diversity

• Qualitative 24-hour dietary recall by mothers
• 7FG dietary diversity index:
  1) grains, 2) pulses, 3) animal flesh, 4) eggs, 5) vitamin A rich fruits & veg, 6) other fruits & veg, & 7) dairy

Household WASH (Index)

1. Improved water source at the house*
2. Drinking water pot covered*
3. Household has a clean toilet*
4. No animal or human faeces at house*
5. Water and soap/ash available in the house*
6. Living area free of garbage*
7. Living area free of animals*
8. Children (<5y) do not openly defecate
9. Proper disposal of child (<5y) stools
10. Maternal recall of five key times for hand-washing
   (after defecation, after cleaning a child who defecated, before cooking/preparing food, before eating, & before feeding a child)
1. **Descriptive analysis**

2. **OLS linear regression models**
   - Primary outcome: child LAZ (continuous)
   - Primary explanatory: WEAI 5DE overall (binary) and 10 indicators (binary)
   - Control variables: child, maternal, household, and district-level clustering

3. **Causal mediation models**
   - Primary outcome: child LAZ (continuous)
   - Primary explanatory: 3 WEAI 5DE indicators (binary) with a statistically significant association with child LAZ
   - Mediators: child dietary diversity (continuous) and household WASH facilities and practices (continuous)
   - Control variables: child, maternal, household, and district-level clustering
Results: Child (6-24m)

Nutritional Status

<table>
<thead>
<tr>
<th>Nutritional status</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length-for-age Z-score (n=1396)</td>
<td>-1.63</td>
<td>1.2</td>
</tr>
<tr>
<td>Weight-for-age Z-score (n=1397)</td>
<td>-1.57</td>
<td>1.1</td>
</tr>
<tr>
<td>Weight-for-length Z-score (n=1392)</td>
<td>-0.98</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Prevalence of Under-nutrition

- Stunting (n=1396): 37.8%
- Underweight (n=1397): 34.4%
- Wasting (n=1392): 16.3%
## Results: WEAI 5DE

**Women’s empowerment in agriculture**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5DE</strong> (Five Domains of Empowerment)</td>
<td>8.6%</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td></td>
</tr>
<tr>
<td>Input into productive decisions</td>
<td>81.4%</td>
</tr>
<tr>
<td>Autonomy in production</td>
<td>30.2%</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td></td>
</tr>
<tr>
<td>Ownership of assets</td>
<td>84.9%</td>
</tr>
<tr>
<td>Purchase, sale, or transfer of assets</td>
<td>57.2%</td>
</tr>
<tr>
<td>Access to and decisions about credit</td>
<td>30.1%</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
</tr>
<tr>
<td>Control over use of income</td>
<td>59.7%</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td></td>
</tr>
<tr>
<td>Group membership</td>
<td>20.7%</td>
</tr>
<tr>
<td>Confidence speaking in public</td>
<td>80.4%</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td></td>
</tr>
<tr>
<td>Workload (&gt;10.5 hours per day)</td>
<td>35.1%</td>
</tr>
<tr>
<td>Leisure time satisfaction</td>
<td>82.1%</td>
</tr>
</tbody>
</table>
### Results: 5DE and LAZ

<table>
<thead>
<tr>
<th>Length-for-age Z-scores (N=1013)</th>
<th>Coef</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5DE (Five Domains of Empowerment)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input into productive decisions</td>
<td>0.01</td>
<td>0.92</td>
</tr>
<tr>
<td>Autonomy in production</td>
<td>0.19*</td>
<td>0.02</td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ownership of assets</td>
<td>0</td>
<td>0.98</td>
</tr>
<tr>
<td>Purchase, sale, or transfer of assets</td>
<td>-0.72</td>
<td>0.35</td>
</tr>
<tr>
<td>Access to and decisions about credit</td>
<td>0.17*</td>
<td>0.03</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control over use of income</td>
<td>0.12</td>
<td>0.21</td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group membership</td>
<td>0.03</td>
<td>0.81</td>
</tr>
<tr>
<td>Confidence speaking in public</td>
<td>0.05</td>
<td>0.6</td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workload (&gt;10.5 hours per day)</td>
<td>0.07</td>
<td>0.39</td>
</tr>
<tr>
<td>Leisure time satisfaction</td>
<td>0.34**</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Note: * *p < 0.05, **p < 0.001
Results: Path Analysis of Maternal Autonomy in Production and LAZ

Note: * p < 0.05, ** p < 0.001
Results: Path Analysis of Maternal Access & Decision-making on Credit and LAZ

Note: * p < 0.05, **p < 0.001
Results: Path Analysis of Maternal Satisfaction with Leisure Time and LAZ

Note: * p < 0.05, **p < 0.001
Conclusions

• Consistent with literature that women’s empowerment and child nutritional status are associated; consistent with same WEAI 5DE associational analysis for children <2 years of age (PHN publication).

• Results are exclusively about women’s empowerment in agriculture but can be compared to other measures of women’s empowerment.

• Indicators are not monotonic: Different aspects of women’s empowerment in agriculture influence child nutritional status in different ways; some are and others aren’t associated; and also differs by nutritional outcome

• In this context, women’s empowerment in agriculture influences child LAZ but not via dietary diversity or household WASH – additional studies are needed to answer questions re: the pathways.
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THANK YOU!!!