Impact of a Government Livestock Asset Transfer Program Plus Social Behavior Change Communication on Maternal Knowledge and Child Milk Consumption in Rwanda

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Introduction
- Through its One Cow per Poor Family “Girinka” program, the Government of Rwanda provides an exotic or cross-bred dairy cow to households with low socioeconomic status that do not already own cattle.
- Prevalence of milk consumption among young children in Rwanda remains low: 24% of children aged 6 to 23 months.
- Girinka does not include a social behavior change communication (SBCC) component to increase consumption of home-produced milk.

Methods
- **Study Design:** Cluster randomized controlled trial using administrative cells as the clusters (Figure 1)
- **Measurement:** Cow’s milk consumption (24-hour recall and 7-day recall); maternal knowledge of cow’s milk consumption; exposure to the intervention
- **Analysis:** Longitudinal random effects regression with robust standard errors to account for clustering at the level of the cell and estimate difference-in-difference for the impact of the intervention
- **Intervention:** SBCC implemented by community health workers (CHWs) through home visits and community activities for 9 months; counseling, cards, brochure, and poster used to promote children’s consumption of cow’s milk and other animal-source foods

Figure 1. Study Flow Diagram

130 administrative cells in Nyabihu and Ruhango Districts

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girinka + SBCC</td>
<td>Girinka only</td>
</tr>
<tr>
<td>65 cells</td>
<td>65 cells</td>
</tr>
</tbody>
</table>

Findings and Interpretations

**Intervention Exposure**
- Intervention exposure among Girinka + SBCC participants was high (Table 1). On average, mothers participated in 5 home visits and 6 community activities.

<table>
<thead>
<tr>
<th></th>
<th>Home visits</th>
<th>Community activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=223</td>
<td>N=223</td>
</tr>
<tr>
<td>Mother participated in SBCC intervention</td>
<td>90.7%</td>
<td>82.8%</td>
</tr>
</tbody>
</table>

Table 1. Participants’ Exposure to the SBCC Intervention

- Topics CHW discussed
  - Importance of animal-source foods for children and mothers: 90.3% vs. 98.3%
  - Children should drink one cup of cow’s milk per day: 74.4% vs. 77.8%
  - Introduce cow’s milk at 12 months: 73.4% vs. 79.4%

- Measured in Girinka + SBCC participants only
- Of the mothers who participated in home visits
- Of mothers who participated in community activities

**Mother’s Knowledge**
- Mother’s knowledge of cow’s milk as an animal-source food and the introduction of cow’s milk at 12 months was significantly higher in the Girinka + SBCC group compared with the Girinka-only group at endline (Figure 2).

**Children’s Animal-Source Food Consumption**
- In both study groups, children’s consumption of fresh milk increased from baseline to endline, whereas consumption of powdered milk in Shisha kibondo decreased (Figure 3).
- Shisha kibondo is a mix of blended flours, skimmed milk powder (8%), and micronutrients given for free to poor families with children aged 6 to 23 months. As children in the study aged out of receiving Shisha kibondo, they were given more fresh milk.

**Children’s Weekly Milk Consumption**
- The Girinka + SBCC group had an 8 percentage point increase in consumption of fresh cow’s milk 2 or more times in the past week (Figure 4).

**Relationship Between Intervention Exposure and Children’s Milk Consumption**
- Children in the Girinka + SBCC group had increased odds of consuming milk 2 or more times in the past week if their mothers recalled hearing that children should drink 1 cup of milk per day from the CHW:
  - During a home visit [OR 2.1, 95% CI (1.1, 3.9)]
  - During a community activity [OR 2.0, 95% CI (1.2, 3.5)]

**Household Milk Production and Use**
- No differences in milk production or use by study group.
- About 45% of households reported they never use milk produced by their cow because production is too low.
- About 30% of households with milk sold part of or all their morning milk.
- Average daily milk production was 1 liter at baseline and 1.5 liters at endline.

Conclusions
- Layering an SBCC intervention on the Girinka program:
  - Improved maternal knowledge related to cow’s milk consumption
  - Increased frequency of weekly milk consumption among children
  - Showed that intervention exposure was related to increased odds of weekly milk consumption among children
- Reasons for lack of stronger SBCC effects:
  - Low milk production and sale of home-produced milk
  - Short duration of intervention