Development and Dynamic Evaluation of an Integrated Mother / Baby WASH and IYCF Strategy to Address Child Stunting

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Research Aim

Develop a **validated approach** to improve infant nutrition via

1. improved maternal diet and infant feeding
2. reduced exposure to fecal pathogens
3. lower worm burden.

*Can we deliver and measure changes to caregiver and baby WASH, infant and young child feeding, and deworming as part of an enhanced THRIVE II program?*
<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Conduct formative research</td>
<td><strong>Purpose:</strong> Identify suite of relevant behaviors and influencers</td>
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<tr>
<td>2.</td>
<td>Prioritize target behaviors</td>
<td><strong>Purpose:</strong> Focus scope</td>
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<td>3.</td>
<td>Create problem trees with causal analysis</td>
<td><strong>Purpose:</strong> Articulate problem statements, identify strong and weak causal links, create hierarchical visual representations</td>
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<td>4.</td>
<td>Develop solution trees &amp; articulate assumptions, rationales for change</td>
<td><strong>Purpose:</strong> Translate identified behavioral problems into healthy goal statements or solutions</td>
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<td>5.</td>
<td>Link solution trees to intervention functions</td>
<td><strong>Purpose:</strong> Link solution tree goal statements to behavioral domains, theoretical framework and intervention functions</td>
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<td>6.</td>
<td>Develop the intervention plan</td>
<td><strong>Purpose:</strong> Identify potential behavior change techniques (BCT)</td>
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<tr>
<td>7.</td>
<td>Determine the intervention activities</td>
<td><strong>Purpose:</strong> Package behaviors thematically and develop intervention activities.</td>
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<td>8.</td>
<td>Pilot, refine and test the intervention package</td>
<td><strong>Purpose:</strong> Arrive at a refined intervention package based on user testing and preliminary evaluation</td>
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Theoretical Foundations


COM-B, Designing for Behavior Change Barrier, Analysis and Grandmother Project’s Change Through Culture Approaches informed formative research methods.
Formative Research Findings

- Physical capability
- Psychological capability
- Reflective motivation
- Automatic motivation
- Physical opportunity
- Social opportunity
- Capability
- Motivation
- Opportunity
- Behaviour

- Complementary feeding, child feces disposal, food hygiene
- Many WASH and IYCF behaviors were low priority, norms around feeding
- Water treatment products, access to water and diverse foods, construction of toilets, purchase of soap, women’s time burden
Revising key behaviors
Focus on proven approaches, achievable behaviors to target

1. Hygienic infant and young child feeding
2. Household water treatment;
3. Mother and baby handwashing at key times;
4. Household toilets with handwashing station;
5. Safe disposal of infant and young child feces;
6. Protected hygienic play environment for children under age two; and
7. De-worming for control of soil-transmitted helminth infection
<table>
<thead>
<tr>
<th>Behaviour Packages</th>
<th>Focus</th>
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<tbody>
<tr>
<td>Food Hygiene</td>
<td>• Hand washing with soap</td>
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<td></td>
<td>• Food safety during preparation</td>
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<td></td>
<td>• Covered food storage</td>
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<tr>
<td>Meal times</td>
<td>• Food selection (diversity)</td>
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<td></td>
<td>• Food prioritization</td>
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<tr>
<td></td>
<td>• Responsive feeding</td>
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<td></td>
<td>• Proper handwashing during meal-times</td>
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<td></td>
<td>• Adequate CF frequency, amount, consistency</td>
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<tr>
<td>Clean compound</td>
<td>• Hygienic play environment</td>
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<tr>
<td></td>
<td>• Child faecal disposal</td>
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<tr>
<td></td>
<td>• Handwashing with soap after child faecal disposal</td>
</tr>
<tr>
<td></td>
<td>• Hand washing with soap after defecation</td>
</tr>
<tr>
<td>Determinant (COM-B)</td>
<td>Interv function</td>
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<tr>
<td>Reflective Motivation</td>
<td>Enablement</td>
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<tr>
<td>Physical Opportunity</td>
<td>Env. restructuring</td>
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<tr>
<td>Psychol. Capability</td>
<td>Training</td>
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<td>Physical Opportunity</td>
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Intervention design
Behavioral Packages

Hygienic Food Preparation and Storage
- Mesh food cover
- Food hygiene card
- Handwashing station with soap delivery system
- Pledge Card

Mealtime
- Dietary Diversity Wheel Tracker
- Feeding Bowl, slotted spoon, counseling Card
- Handwashing station with soap delivery system
- Community Cooking/Feeding Demos (community event)
- Pledge Card

Clean Compound
- Picture story book (shared in neighbor women group)
- Feces Scooper (made in HH with local materials)
- Handwashing station with soap delivery system
- Pledge Card

Aim for at least 5 each day
Intervention design

Community event-introduction
- Analogy of Children like a Maize Plant
- Introduction to Key Messages with Skits
- Group Activity – Family Member Roles
- Community Pledge

Counseling Sessions
- Neighbor Women Group -- Introduction to key messages
- Household Visit by CGV
  - Assess current Household Practices
  - New Technologies
  - Review of Key Messages
  - Behavioral Pledges
- Supportive supervision of CGVs by social workers, CHVs, case managers ensured targets were being met

Photo: credits Emily Ogutu
Behavioral trials (Trials of Improved Practices)

Analysis

- Mesh food covers, feeding bowls/ spoons well-liked and facilitated behavior change in safer food storage and CF practices
  - In high demand
- Pledges and facilitator follow-up/support was well received
- Moving handwashing station locations made handwashing more convenient/acted as a cue to action
- Food Hygiene cards were used and acceptable
- Households innovated feces scoopers and fashioned them out of different materials

NEXT STEPS: Implemented refined, integrated package in 21 randomly allocated care groups (21 controls); ongoing analysis of endline data
Take home message!
Integration and the use of theory

1. Integration of WASH and nutritional programs are critical to maximize impact on stunting, and likely ECD

2. Theory-based behavior change techniques support movement away from ineffective “knowledge” focused messaging

3. Thematically coupling behaviors (e.g., meal time) may help support behavioral maintenance