“The women have trust in me, and I try to live up to this trust”: Community-based and participatory approaches to improving health and nutrition globally

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Food and Water Insecurity
Food and Water Insecurity

Health Care Delivery
“TODAY IT HAS BECOME ALL TOO OBVIOUS THAT INTERVENTIONS Seldom WORK AS INTENDED.”

INNES & BOOHER. 1999. J AM PLAN.
How do food & water insecurity shape health?

Food Environment Indicators
Infant and young child feeding
<table>
<thead>
<tr>
<th>Location &amp; Tributaries</th>
<th>Fish</th>
<th>Men Over 15 &amp; Women Over 50</th>
<th>Women Under 50 &amp; Children Under 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>All waters NOT listed (Western Region)</td>
<td>All fish</td>
<td>Up to 4 meals/month</td>
<td>Up to 4 meals/month</td>
</tr>
<tr>
<td>Buffalo River and Harbor (PCBs)</td>
<td>Channel catfish</td>
<td>Up to 1 meal/month</td>
<td>DON'T EAT</td>
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<tr>
<td></td>
<td>Carp</td>
<td>DON'T EAT</td>
<td>DON'T EAT</td>
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<tr>
<td></td>
<td>All other fish</td>
<td>Up to 4 meals/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td>Cayuga Creek (Dioxin)</td>
<td>All fish</td>
<td>DON'T EAT</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td>Delaware Park Lake/Hoyt Lake (PCBs)</td>
<td>Carp</td>
<td>Up to 1 meal/month</td>
<td>DON'T EAT</td>
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<tr>
<td></td>
<td>All other fish</td>
<td>Up to 4 meals/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td>Eighteenmile Creek, above and below Burt Dam (PCBs)</td>
<td>All fish</td>
<td>DON'T EAT</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td>Erle Canal, between Lockport &amp; Niagara River (PCBs)</td>
<td>Carp</td>
<td>Up to 1 meal/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>All other fish</td>
<td>Up to 4 meals/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td>Lake Ontario * (PCBs, Mirex, Dioxin)</td>
<td>Rock bass, Yellow perch, Burbot</td>
<td>Up to 4 meals/month</td>
<td>Up to 4 meals/month</td>
</tr>
<tr>
<td></td>
<td>Carp, Channel catfish</td>
<td>Up to 1 meal/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>All other fish</td>
<td>Up to 4 meals/month</td>
<td>Up to 1 meal/month</td>
</tr>
<tr>
<td></td>
<td>White sucker</td>
<td>Up to 1 meal/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>White perch</td>
<td>East of Point Breeze, up to 1 meal/month; West of Point Breeze, DON'T EAT</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>Lake trout</td>
<td>Greater than 25&quot;, up to 1 meal/month; Less than 25&quot;, up to 4 meals/month</td>
<td>DON'T EAT</td>
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<tr>
<td></td>
<td>Carp, Channel catfish</td>
<td>DON'T EAT</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>Brown trout</td>
<td>Greater than 20&quot;, up to 1 meal/month; Less than 20&quot;, up to 4 meals/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>All other fish</td>
<td>Up to 4 meals/month</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td>Lewiston Reservoir/Power Reservoir (PCBs)</td>
<td>Carp</td>
<td>DON'T EAT</td>
<td>DON'T EAT</td>
</tr>
<tr>
<td></td>
<td>All other fish</td>
<td>Up to 4 meals/month</td>
<td>DON'T EAT</td>
</tr>
</tbody>
</table>

*Note: Lake Ontario is included as an area of concern due to PCBs, Mirex, and Dioxin.**

Fisherman showing his catch at the Niagara River
Methods:
* Food Frequency Questionnaire
* Survey
* In-Depth Interviews
* Mercury measurement
* Community meetings


Checking traps with Vuntut Gwitchin elder Stephen Frost in Old Crow, Yukon, Canada.
Women lining up to collect water in Puerto Rico after Hurricane Maria devastated the island in September, 2017.

Plastic bottle filled with tap water from the city of Flint, Michigan, 2016.
WATER INSECURITY & MEASUREMENT

A condition when at least one of these variables related to water (affordability, reliability, adequacy, and safety) is significantly reduced or unattainable so as to threaten or jeopardize well-being (Jepson et al., 2017, WIRES).
Breastfeeding

Perceived barriers

**Gap**: chronic dehydration
- Gambian lactating women fasting during Ramadan (Prentice, 1984)
- Lactating women in Amazon (Rosinger, 2014)

Complementary Feeding

Water insecure women - less foods, less diverse foods, feed breastmilk longer (Collins et al., under review)

Hypothesis that **environmental enteric dysfunction** is driving stunting (Mbuya & Humphrey, 2015)
ASSESSING UNDERSTANDING OF WATER INSECURITY ON INFANT FEEDING

Open-ended survey question: “Can you tell me some ways that the water situation here affects how infants (under 12 months of age) are fed?”

Preliminary analysis: 11 of 30 sites
- Female ~72% (n=2,377)
- Male ~28% (n=924)

Thematic & Content Analysis

Enumerator training and survey pretesting in Dushanbe, Tajikistan
**BREASTFEEDING**

**Economic:** “Mothers take a long time looking for water, so the baby stays ‘unbreastfed’” (Woman, Kenya)

**Nutrition:** “When there is water we feed them porridge and everything, and when there is no water we feed them just breastmilk” (Woman, Ethiopia)

**Disease:** “The infant does not drink water, but if his or her mother will drink dirty water, it affects the infant through breastfeeding.” (Woman, Tajikistan)

**Psychosocial:** “Water scarcity stresses mothers and they lack enough breast milk to feed their infants” (Woman, Uganda)

**Maternal caregiving capabilities:** “I have water to care for my children; a real mother should always have water at home” (Woman, Nigeria)
Condensed conceptual framework for potential pathways for how water insecurity affects breastfeeding.
Next Steps

Complete coding and thematic analysis

Hypothesis Testing

**Breastmilk quantity:** Households that go to sleep thirsty more frequently report concerns about breastmilk insufficiency

**Breastmilk quality:** Households with members that more frequently go without washing hands/body parts more frequently mention concerns of breastfeeding contributing to child illness

**Maternal caregiving:** Sites where women have longest times to obtain water have less negative perceptions about maternal caregiver capabilities
How can delivery of care be enhanced to improve service uptake and health outcomes?

Cancer screening
Maternal health
HIV/AIDS
"A community of educated and involved patients working hand in hand with physicians in making decisions about their own health care"

Initially focused on **cancer screening**, now including chronic health conditions

Evolved to be an Advisory Board

Sub-study on refugee understanding of cancer (life course theory)

PI: Laurene Tumiel-Berhalter, Director of Community Translational Research, SUNY Buffalo Department of Family Medicine


Women from the Karen, Burmese, Burundian, Sudanese, Somali, and Iraqi refugee communities in Buffalo, NY training to become doulas.
Preventing vertical transmission of HIV in Mozambique

At time of formative research (2012-13):
- 13.7% HIV prevalence women of reproductive age
- 20% rate of vertical transmission (mother-to-child)

Severe health worker shortage
- Centralized health system
- Concern about worker motivation
Health workers who prevent vertical transmission of HIV

Maternal & child health nurses, midwives

Community volunteers (HIV-specific)

Community health workers

Traditional birth attendants
Performance-based incentives (PBI)

Definition: Transfer of money conditional on service delivery

Goal: To align workers’ motivations with that of the health system’s

Gap: Lack of attention to and description of implementation makes PBI studies incomparable (Cochrane review)

Overarching research question

Can performance-based incentives improve workplace environment and increase services delivered to pregnant and lactating women living with HIV/AIDS? (Motivation-opportunity-ability framework)

- Phase 1: Formative research
- Phase 2: Intervention design
- Phase 3: Implementation (longitudinal comparison) & mixed methods evaluation

Goal Setting and Incentives

Health facility committee/entire association
- Chose indicators, set goals
- Autonomy to prioritize incentive use
- Split between personal incentives and for facility/association
Intervention objectives

Assess impact of incentives on:

I. Number of services delivered
II. Health worker motivation
III. Workplace environment factors
IV. Satisfaction and intention to leave
Workplace environment & thoughts of leaving

- Structured supervision
- Collegial support
- Autonomy and empowerment

“start to see by themselves what was working or not, and what they could do to improve it in order to receive their [incentive] amount. That was a way of giving…autonomy. And that’s a good thing”  (Facility leader, Exit interview)

Thoughts of leaving

NEXT STEPS

Coercion in prevention of vertical transmission of HIV care (Mozambique)

Exploring collaborations with the Women’s Refugee Health Clinic
Global Impact Collaboratory

**What:** Partnership between implementers & methodologists

**Goal:** Assess if the projects are actually designed for and “working” from the perspectives of the target population

**My role:** Apply social science methods, support faculty across university in developing MEL plans for development projects
Overarching Research Question

Can we apply social science methods to standard evaluation practices to make programs more responsive to communities they are intended to help, with better data collected quicker and cheaper than current practices?

Coastal City Adaptation Project. Chemonics colleagues discussing erosion that washed away a house. Mozambique.

Cultural consensus analysis

Derives “cultural models” through factor analysis across participants

Measure **shared** knowledge and estimate **variations** in knowledge through respondent agreement

Individuals whose answers are closest to the answer key have highest loading on first factor and considered the most “culturally competent”

Romney, Batchelder, & Weller, 1986; Weller, 2007
Enhanced Palestinian Justice Project Objectives

Stability
Confidence in the Palestinian Authority
Trust in justice sector institutions
User satisfaction with justice sector institutions and services
EPJP interventions achieved (modernization, capacity building & outreach)

Our case study objectives

1. Validate assumptions in program documents
2. Examine assumptions about women’s empowerment
Data collection

60 yes/no items: structural barriers, economic empowerment, gender-based violence

<table>
<thead>
<tr>
<th>Public purposive sampling</th>
<th>City Location</th>
<th>Village Location</th>
<th>Refugee Camp</th>
<th>Total</th>
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</thead>
<tbody>
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<td>E. Jerusalem</td>
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<td>Nabulus</td>
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<td>Tulkarem</td>
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<tr>
<td>Total</td>
<td>30</td>
<td>30</td>
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</tbody>
</table>
Key Findings

Confirmed (vast majority) of program assumptions

Different cultural models by gender, type of municipality
- No agreement: among men, cities
- Low/moderate agreement among women, villages, refugee camps, some regions
Implications

Cultural consensus useful for program targeting

- Identifies people most/least knowledgeable

May not be appropriate where norms are rapidly shifting

Training students, community based providers

- Training and analysis challenging for program staff to take over

Trained 50 university students and 10 professors in research ethics and qualitative and quantitative survey methods in Mozambique
Next Steps

Test cultural consensus for monitoring

Webinars

Supporting evaluation capacity in international development across ASU

Meeting with community leader in a refugee camp
Acknowledgements

Partners:

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Vuntut Gwitchin Government
UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA
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UB|MD FAMILY MEDICINE
ASU International Development
Chemonics
Northwestern University
U MIAMI
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MARIO EINAUDI Center for International Studies
FULBRIGHT
USAID FROM THE AMERICAN PEOPLE
UK aid from the British people
immana
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Vuntut Gwitchen elder Mary Jane checking dried caribou meat.

Teslin, Yukon Territory


Muskrat trapping at the youth culture camp.

Bananas in Old Crow Store.
CONCEPTUAL FRAMEWORK

Participatory intervention development; goal-setting

PBIs

Motivation
- Extrinsic motivation
- Intrinsic motivation

Workplace environment
- Resources
- Collegial support
- Supervision
- Administrative support
- Empowerment

Job satisfaction
- Thoughts of leaving

Satisfaction

Facility-based health workers
- Improve quality of services

Community volunteers
- Increase number of services delivered in community

PBI disbursement
- Increase number of services delivered at facility level
- Increase demand for facility-based services

Legend:
- Measured
- Unmeasured
Coastal City Adaptation Project (CCAP)

Social & behavior change intervention to increase adaptive capacity to climate change threats

- Community-based disaster risk management committees
- Climate smart latrines
- Protected water catchment areas
- Safe disposal of waste
- Climate smart houses
- Mangrove protection
Cultural data collection

Stratified random sampling (neighborhood vulnerability to climate change)

- 70-item cultural surveys (n=433)
- 11-item semi-structured interviews (n=46)

Student enumerator on random walk to select households

Trained 50 university students and 10 professors in research ethics and qualitative and quantitative survey methods
Key Findings

Climate change is a threat

- Current adaptation strategies insufficient
- Living on a floodplain acceptable
- Harvesting mangroves is way of life

Differences in cultural models by cities, religion, gender

- Not neighborhood vulnerability to climate change

Trash in a river flow-through, which floods, in Pemba, Mozambique