

## The Household Water Insecurity Experiences Research Coordination Network

### A novel tool for measuring progress towards global water security: health, agriculture, and policy implications

**Target Countries:** 28 sites in 23 low- and middle-income countries

**Dates:** March 2017 – October 2018



**Research Lead:**

Sera L. Young, Northwestern University  
sera.young@northwestern.edu

**Lead Research Contributors (of over 40 consortium members):**

- Amber Wutich, Arizona State University
- Wendy Jepson, Texas A&M University
- Chad Staddon, University of the West of England - Bristol
- Justin Stoler, University of Miami
- Edward Frongillo, University of South Carolina
- Torsten Neilands, UCSF
- Godfred Boateng, Northwestern University
- Zeina Jamaluddine, American University of Beirut
- Alexandra Brewis, Arizona State University

**Motivation:** The World Economic Forum has listed “water crises” as among the top 10 most likely and impactful global risks. But critical data on water are missing. Although there are many measures of water availability, the UN-commissioned High-Level Panel on Water has listed the collection of more robust data on water access and use as a priority for understanding and developing solutions for the global water crisis.

**Objective:** To create the first tool for comparative analysis of household water insecurity to be able to identify exactly who is water insecure, to what extent, and where and when it occurs.

**Research Methods:** Cross-sectional surveys were implemented in 8127 households; classical test and item response theories were used to assess scale dimensionality, reliability, and equivalence

**Key Publications to Date (of more than 10 published on the topic):**

- The Household Water InSecurity Experiences (HWISE) Scale: development and validation of a household water insecurity measure for low-income and middle-income countries. (2019). *BMJ Global Health*.
- Development and validation protocol for an instrument to measure household water insecurity across cultures and ecologies: the Household Water InSecurity Experiences (HWISE) Scale. (2018). *BMJ Open*.

**Findings:**

- The 12-item HWISE Scale quantifies experiences of household water insecurity in an equivalent way across low- and middle-income countries.
- Higher HWISE Scale scores (i.e., greater water insecurity) are strongly associated with food insecurity, stress, physical injury, lower economic productivity, altered infant feeding practices, and adverse health.

**Uses of the HWISE Scale:**

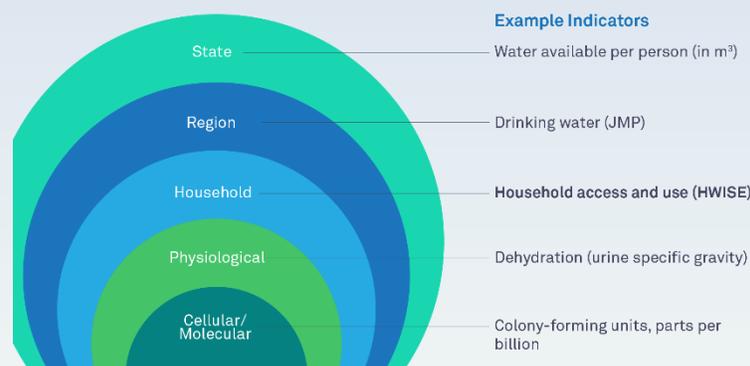
1. Benchmark the *prevalence* of water insecurity and *identify the most vulnerable* populations to effectively target resources and care.
2. *Assess the role of water* in health and well-being, from food insecurity and infectious diseases to economic productivity and environmental wellbeing.
3. Facilitate systematic, comparable *monitoring and evaluation* of water-related interventions.
4. *Develop policies* and support effective evidence-based decision making.

**Next Steps:**

We are partnering with UNESCO and Gallup to raise resources for the inclusion of the tool in the Gallup World Poll, providing vital actionable data. We also seek to implement the scale in nationally representative surveys. Numerous NGOs are currently using the tool to monitor and evaluate ongoing projects, and will share their findings soon. **Learn more at [hwise.org](http://hwise.org).**

**Research Presentations:**

- Cairo Water Week (Oct 2019)
- UNC Water and Health (Oct 2019)
- Chicago Council on Global Affairs (June 2019)
- Agriculture, Nutrition, and Health Week (June 2019)
- AAAS (Feb 2019)
- IFPRI (Feb 2019)
- World Bank (Feb 2019)
- USDA (Feb 2019)



**Figure 1.** The HWISE Scale complements existing water metrics and offers novel insights into water use and adequacy.