

Do community gender equitable attitudes influence child feeding practices and nutritional status in low resource settings? Evidence from Tanzania

Extended Abstract

Authors:

Natasha C. Allard, MBA, MS, PhD student; Policy Research Solutions (PRESTO)

Happyness Nyaborogo, PhD student; University of Dar es Salaam

Paul Luchemba, MSc; Tanzania Social Action Fund

Tumpe Mnyawami Lukongo, MA; Tanzania Social Action Fund

Tuzie Ndekia, MS; UNICEF Tanzania

Luisa Natali, PhD; UNICEF Tanzania

Kate Rogers, PhD, MPH; Policy Research Solutions (PRESTO)

Leah Prencipe, PhD, MPH; Policy Research Solutions (PRESTO)

Stephanie Anzman-Frasca, PhD; University at Buffalo

Tia Palermo, PhD; Policy Research Solutions (PRESTO)

On Behalf of the Stawisha Maisha Evaluation Team*

Background. Tanzania suffers from high levels of child malnutrition, with nearly a third (30%) of children under 5 stunted (low height-for-age) in 2022.¹ Given that climate change poses an increasing risk to detrimental child growth outcomes², there is an urgent need to understand opportunities for improving child nutritional status. Childhood malnutrition has negative consequences across the life course, contributing to child mortality, disability, cognitive impairment, chronic disease, and reduced productivity in adulthood.³ In Tanzania, stunting, which is largely driven by suboptimal infant and young child feeding practices, is more prevalent in rural areas and among lower wealth quintiles.¹ Moreover, global-level modeling shows climatic variability will likely increase stunting prevalence in rural areas and low-income countries, likely via increases in food prices and lower incomes.² In light of these growing barriers to adequate child nutrition practices, promoting adherence to current guidelines is more important than ever. In efforts to encourage healthy infant and child development, the World Health Organization (WHO) and UNICEF provide evidence-based infant and young child feeding guidelines, including introducing solid, semi-solid, or soft foods into a child's diet between ages 6 and 8 months.⁴ Introducing solids too early (before the age of 6 months) or too late (after 8 months or older) can negatively impact child health and increase stunting risk.^{5,6} There are multiple barriers to improving child feeding practices, including poverty and limited access to adequate foods, increasingly detrimental climate change impacts, lack of knowledge on age-appropriate nutritional needs, and individual and community-level gender norm attitudes, among others. Inequitable gender attitudes have been shown to negatively impact child stunting risk and mothers' autonomy for making decisions about child feeding.⁷ Given the urgent need to improve child feeding practices and stunting prevalence among rural, low wealth households in Tanzania, in this study we aimed to: 1) identify risk factors associated with stunting and untimely solid

feeding and 2) examine how community level gender attitudes are associated with each outcome.

Methods. This study uses baseline child level data (N=3,605) from the Stawisha Maisha Evaluation which is being conducted to estimate the impacts of a cash plus programme on child nutrition related outcomes among beneficiaries of the Productive Social Safety Net II (PSSN II). In 2023, 2,250 surveys were administered to eligible households across 150 villages in the Geita, Rukwa, and Ruvuma regions of Tanzania. For each household, a primary caregiver of a child under five years was interviewed on a range of outcomes related to child feeding, nutrition knowledge, and gender equitable attitudes. Anthropometrics, namely height, weight, and mid upper arm circumference, were collected among all children under 5 years of age. To measure community level gender attitudes, we included 24 items from the Gender-equitable Men Scale (GEM Scale). We calculated non-self-clustered mean GEM scores by village and then ranked them into tertiles (high, middle, low), whereby lower levels indicated less equitable attitudes. We used multivariate logistic regression to determine risk factors for child stunting (<2 SD below standard height-for-age z-score) and untimely solid feeding (first solid before 6 months or after 8 months). We then implemented generalized linear models (GLM) with a Poisson distribution and log link function to estimate associations between stunting or untimely solid feeding prevalence and community gender equitable attitudes (high tertile communities versus low/middle tertile communities) as reported by prevalence ratios (PR). Estimates were calculated on the child level and standard errors were adjusted for clustering at the village level. The models were adjusted for household (e.g., food security, water security, living conditions, etc.), caregiver (e.g., education, literacy, etc.), and child (e.g., living with biological mother, age, etc.) characteristics.

Results. Overall, 42.4% (n=1,477) of children measured in the sample were stunted. Caregivers reported untimely solid feeding for approximately a third of the sample (34.5%, n=1,067), among whom half were fed too young (49.7%) and half too old (50.3%). Stunting risk factors were identified as living in the Rukwa region (compared to Geita), living in a house with an earth/mud floor, and being a male child. Risk factors for untimely solid feeding included living in Ruvuma (compared to Geita), living in a water insecure household, and having a primary caregiver with no formal education. Community level gender attitudes were significantly associated with untimely solid feeding but not stunting; children living in communities with high gender equitable attitudes had a lower prevalence of untimely solid feeding (PR=0.84, 95% CI=0.74-0.96, p=0.012) when compared to communities with low or middle gender equitable attitudes. When stratified by child sex, community level gender equitable attitudes were not associated with untimely feeding for females, but among males high community gender equitable attitudes were associated with an lower prevalence of untimely solid feeding among male children (PR=0.82, 95% CI=0.69-0.98, p=0.027, when compared to communities with low or middle gender equitable attitudes).

Conclusion. In a sample representative of PSSN participating households with children under five years in three districts, male children were at greater risk for stunting than females. However, male children who live in communities with more gender equitable attitudes are 18% less likely to experience a known stunting risk factor, untimely first solid foods. Previous studies have found

male children are at greater stunting risk; however the mechanisms that perpetuate this risk remain partly unexplained.⁸ Some studies suggest possible social and environmental factors, such as believing male children need more food and thus potentially feeding solid foods too early (which inadvertently increases their risk of stunting).⁸ The current study elucidates the importance of gender attitudes. In more gender equitable communities, there may be less differential feeding treatment between males and females and thus males may be protected from the negative effects of untimely solid feeding. The impact of climate change on global childhood stunting is expected to be greater in rural areas and low-income countries², placing Tanzanian children in PSSN households in an especially vulnerable position. Future research is needed to further explore how climate variability intersects with gender attitudes to impact child feeding practices and stunting.

*** Stawisha Maisha Evaluation Team**

Policy Research Solutions (PRESTO): Tia Palermo (co-Principal Investigator), Natasha Allard, Gustavo Angeles, Stephanie Anzman-Frasca, Leah Prencipe, Kate Rogers

EDI Global: Johanna Choumert Nkolo (co-Principal Investigator), Respichius Mitti (co-Principal Investigator), Rachel Bowers, Artee Gungah, Marie Mallet, Prakhar Saxena, Sarafina Safari, Sosthenes Alex, Josephine Donasian Shayo

Muhimbili University of Health and Allied Sciences (MUHAS): Lusajo Kajula (co-Principal Investigator)

Empathea: Lusajo Kajula (co-Principal Investigator), Graca Marwarwe, Agness Ignass, Anitha Mapunda

Tanzania Social Action Fund: Paul Luchemba, Tumpe Mnyawami Lukongo, Zuhura Mdungu

UNICEF Tanzania: Diego Angemi, Patrick Codjia, Tuzie Edwin Ndekia, Jennifer Matafu, Luisa Natali, Patricia Ruddy

References

1. Ministry of Health , Ministry of Health , National Bureau of Statistics , Office of the Chief Government Statistician , ICF. *Tanzania demographic and health survey 2022 - final report*. Rockville, Maryland, USA: ICF;2023.
2. Thiede BC, Strube J. Climate variability and child nutrition: Findings from sub-Saharan Africa. *Global Environ Change*. 2020;65:102192.
3. de Onis M, Branca F. Childhood stunting: a global perspective. *Matern Child Nutr*. 2016;12(S1):12-26.
4. World Health Organization (WHO) and United Nations Children’s Fund (UNICEF). *Indicators for assessing infant and young child feeding practices: definitions and measurement methods*. New York :: United Nations Children's Fund (UNICEF) and World Health Organization (WHO); 2021-04 Apr. 2021 2021. 9789240018389.
5. United Nations Children’s Fund (UNICEF). *Fed to Fail? The Crisis of*

Children's Diets in Early Life. New York: UNICEF;2021.

6. Masuke R, Msuya SE, Mahande JM, et al. Effect of inappropriate complementary feeding practices on the nutritional status of children aged 6-24 months in urban Moshi, Northern Tanzania: Cohort study. *PLoS One*. 2021;16(5):e0250562.
7. Tome J, Mbuya MNN, Makasi RR, et al. Maternal caregiving capabilities are associated with child linear growth in rural Zimbabwe. *Matern Child Nutr*. 2021;17(2):e13122.
8. Thurstans S, Opondo C, Seal A, et al. Boys are more likely to be undernourished than girls: a systematic review and meta-analysis of sex differences in undernutrition. *BMJ Glob Health*. 2020;5(12).