

**Reliability and Validity of Physical Function Tests and ADL Survey Questions in Females Living in Rural, Highland Ethiopia**Jenna Golan,<sup>1</sup> John Hoddinott,<sup>1</sup> and Anna Thalacker-Mercer<sup>2</sup><sup>1</sup>Cornell University and <sup>2</sup>University of Alabama

**Objectives:** In rural, highland Ethiopia, physical function, which is the physical ability to fulfill one's daily roles and responsibilities, may be compromised by a lack of access to nutrition, healthcare, and sanitation. Decreased physical function would be detrimental to health and income-generating activities. Unfortunately, there is a lack of validated methods to measure physical function in adult females in this region. This study aims to test the feasibility and reliability of physical tests, including the sit-to-stand (STS) and usual gait speed (UGS). These physical tests will validate context-appropriate activities of daily living (ADL) questions for use in future surveys.

**Methods:** Study participants consisted of 316 females between the age of 18 and 45 years living in rural Tigray, Ethiopia that had previously participated in an impact evaluation of a safety net program. Over

a one-week period, participants completed the STS and UGS tests and responded to the ADL questionnaires three times. Feasibility was ascertained qualitatively. Reliability was assessed by comparing the results of the tests and questions between each visit using either Cohen's  $\kappa$  or Pearson's  $r$ . Validity was assessed by regressing the responses to the ADL questions against the results of the STS test, controlling for relevant participant characteristics.

**Results:** STS was determined to be a feasible, reliable, and valid physical function test in rural, highland Ethiopia. UGS lacked feasibility and reliability. The validity of the ADLs was inconclusive.

**Conclusions:** STS tests can be used in future research to evaluate the physical function of females living in rural, highland Ethiopia. Future research should replicate this work to determine if STS is suitable in similar populations.

**Funding Sources:** NIH/NIDDK T32 Nutrition Training Program in Translational Science, the H.E. Babcock Fund, and the Bill and Melinda Gates Foundation.