Validation and Human Factors Evaluation of a New Device for Infant Weight Estimation

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Background
Weight is the foremost marker of health outcomes in infants. A weighing scale remains the universal gold standard for obtaining weight; however, in remote, resource-constrained settings access to functional scales can be limited. Even resource-replete settings suffer challenges with respect to weight assessment where it is difficult to remove, or account for the weight of, life-sustaining medical equipment. Though numerous proxies for weight have been evaluated, it is difficult to remove, or account for the weight of, life-sustaining medical equipment.

Methods

Objectives
To determine the predictive performance of, and human factors experience with, an inexpensive, paper-based tool that implements this method (babyTAPE) in a prospective, multi-center, observational, masked study.

Participants
Infants were enrolled from ten study sites.

Measures
Participant demographics and anthropometric measures were summarized using standard summary statistics.

Results

Conclusions
The Mercy babyTAPE device was statistically equivalent to the method on which it was based and approximated infant weights with acceptable variance from the true weight.

Human factors data suggest that the device is easy to use. The babyTAPE can be used to estimate weight in young infants when calibrated scales are impractical or unavailable.

References