

### Is Infant Eating Behavior a Universal Characteristic? Development of a Scale to Measure Infant Eating Behavior Worldwide

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**Objectives:** Food refusal is common in toddlers and may cause or complicate undernutrition. In order to construct a standard measure of eating behavior, relevant to undernutrition, for international use, phrases hypothesized to describe infant enthusiasm for eating (**avidity**, 8 phrases) or food refusal (**avoidance**, 7 phrases) were developed. We aimed to 1) Test their face validity in English and 4 other languages; 2) Assess their internal consistency and their predictive validity combined in scales in 6 languages.

**Methods: Stage 1:** Parents in the UK (English or Urdu speaking), Hong Kong, Cyprus and Indonesia were shown 4 standard videos of children eating enthusiastically or avoiding eating and rated the extent to which each phrase matched each video. **Stage 2:** Parents of children aged 6–24 months were surveyed using the same items and

their children measured. In the UK, Cyprus and Indonesia healthy children were surveyed, while in Kenya, Pakistan & Guatemala healthy and malnourished children were recruited.

**Results: Stage 1:** 149 parents were surveyed and 87–100% participants showed perfect agreement with each avidity phrase and 73–91% for the avoidant phrases. **Stage 2:** 575 parents and children were recruited, of whom 478 were weighed. Internal consistency was high for Avidity (Cronbach Alpha (CA) 0.88) and moderate for Avoidance (CA 0.72) with little variation between countries. After exclusion of 4 items because of low consistency, validity or repetition, scores for avidity and food refusal were constructed. Avidity scores were significantly positively associated with weight  $z$  ( $r = 0.15$   $P = 0.001$ ) and BMI  $z$  ( $r = 0.16$   $P = 0.001$ ), while Avoidance was negatively associated with weight  $z$  ( $r = -0.09$   $P = 0.046$ ) and BMI  $z$  ( $-0.12$ ;  $P = 0.007$ ).

**Conclusions:** Descriptions of infant enjoying or refusing food are widely recognized and show consistent intercorrelation in diverse languages and settings. This scale will provide fresh insights into the causes and treatment of malnutrition worldwide.

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