PO2483

IMPACT EVALUATION USING CHILD ANTHROPOMETRY: TECHNICAL ERROR OF MEASUREMENT MATTERS

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Background and objectives: Precision of anthropometric measurements is affected by human error and instrument quality, which influence the magnitude of detectable changes over time and in response to intervention. However, measurement error is rarely reported or even assessed in child growth studies.

Methods: As part of a longitudinal trial to evaluate the impact of zinc supplementation among Burkinabe children 6-30 mo old, 4 teams of 2 anthropometrists were trained to measure height, weight and mid-upper arm circumference (MUAC) according to WHO recommendations. Throughout the 15 mo of study, regular retraining and 13 standardization sessions were completed by recruiting 10-12 children measured twice by each team. The square root of the measurement error variance defined the technical error of measurement(TEM).

Results: TEM for child length across all standardizations (n=132 children) was 0.43 cm; this fluctuated between 0.27 and 0.67 cm throughout the study and permitted detection of a true change of 1.2 cm (range: 0.8-1.9) with 95% confidence (95%DC). The TEM for weight was 45 g (range: 30-105; 95%DC range: 86-297) and for MUAC was 2 mm (range: 1-4; 95%DC range: 2-10). During the intervention, 10,333 16-wk growth intervals and 2,547 48-wk intervals were assessed. TEM accounted for 38%, 19% and 213% of the mean 16-wk changes in length, weight and MUAC, respectively; and 12%, 6% and 69% of the respective mean 48-wk changes.

Conclusions: Regular training, supervision and standardization throughout a 48-wk trial increased the precision of anthropometric measures used for impact evaluation. Despite this, MUAC was inappropriate to measure 16-wk changes. TEM results can be used to select proper outcome indicators, evaluate staff/instrument performance and compare efficiencies of using longer time intervals versus larger sample sizes in planning trials with growth outcomes.

Key words: Anthropometry, child, measurement error

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NEW DOMESTIC PROCESSING METHODS: EFFECT ON POTATO NUTRITIONAL COMPOSITION

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Background and objectives: Potatoes nutritional and bioactive features are influenced by thermal processing conditions, defining its nutritional composition and health impact. Consumers seek increasingly for faster domestic cooking methods, such as microwave cooking in alternative to current frying or baking. Also, several devices are being commercialized for healthier frying simulation, without a documented characterization of the final processed food nutritional data. Thus, this study aimed to assess and compare the influence of these domestic processing methods on the quality of potatoes processed with olive oil.

Methods: Potatoes were processed by frying, baking, microwave and a low-fat frying device, with equivalent shape and olive oil amounts, except frying. Samples were evaluated for crude fat, fatty acid composition, vitamin E, total carotenoids and total phenols.

Results: Microwave cooked potatoes presented similar fat contents as standard frying, higher than those achieved by baking or with the low-fat frying device tested, but the fatty acid composition was similar. Vitamin E loss was comparatively higher after frying but no significant differences were found for total carotenoids. Potatoes phenolic compounds were partially loss during cooking, being apparently higher after baking.

Conclusions: The distinct nutritional features obtained highlight for the importance of detailing the food compositional tables regarding each processing method, including the "new" domestic methodologies, increasingly used by consumers.

Key words: Potatoes, extra virgin olive oil, domestic cooking, food composition.