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Validity & reproducibility of a food frequency questionnaire to assess nutritional intake among preschool children in Kegalle district, Sri Lanka

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Abstract

Sri Lankan preschool children do not consume a varied and balanced diet, which has resulted in the prevalence of malnutrition among preschool age groups for several decades. An accurate assessment of children's diets is necessary to identify the current diet and evaluate the effectiveness of dietary behavior interventions. Currently, no validated food frequency questionnaire (FFQ) exists to measure the habitual dietary intake of Sri Lankan preschool-aged children. Therefore, a validated dietary assessment method is necessary to evaluate the validity and reliability of an adapted food frequency questionnaire (FFQ) to assess energy and nutrient intake in preschool-aged children. A cross-sectional study was conducted among the preschoolers in Ruwanwella division, Kegalle district, Sri Lanka. A total of 52 preschoolers aged 2–5 years participated in the validation study, while a subsample of 15 participants joined the reliability study. The FFQ is modified from the validated FFQ for adults in Sri Lanka and comprises 114 food items from 8 food groups. A three-day estimated dietary record (3DR) was used as a reference, and reliability was assessed through a second administration of the FFQ (FFQ2), four weeks after the first administration (FFQ1). Spearman's correlations showed a lower correlation between FFQ and 3DR for the validation study ($r = -0.029$ to 0.192) except for vitamin D ($r = 0.215$), energy ($r = 0.217$), calcium ($r = 0.234$) and vitamin C ($r = 0.339$). The results indicated that FFQ overestimated the intakes of 3DR for energy (2572.1 ± 1 vs 1025.9 ± 289.5 kcal) and all nutrients, including protein (72.6 ± 3.4 vs 31.3 ± 1.0 g/day). The portion sizes of FFQ need to be reconsidered and the food list has to be modified to improve the validity of FFQ in future studies.

Keywords: Food frequency questionnaire (FFQ), Preschoolers, Reproducibility, Sri Lanka, Validation

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