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Validity and Reliability of a Food Frequency Questionnaire (FFQ) to Assess Dietary Intake of Preschool Children

Yatiman Noor Hafizah ¹, Lee Choo Ang ¹, Fendy Yap ¹, Wan Nurul Najwa ¹, Whye Lian Cheah ², Abd Talib Ruzita ¹, Farra Aidah Jumuddin ¹, Denise Koh ³, Julia Ai Cheng Lee ⁴, Cecilia A. Essau ⁵, Sue Reeves ⁶, Carolyn Summerbell ⁷, Edward Leigh Gibson ⁵ and Bee Koon Poh ^{1,*}

¹ Nutritional Sciences Programme & Centre for Community Health Studies, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur 50300, Malaysia; hafizahyatiman@ukm.edu.my (Y.N.H.); angleechoo27@gmail.com (L.C.A.); fendy_yap@hotmail.com (F.Y.); najwawannik@gmail.com (W.N.N.); rzt@ukm.edu.my (A.T.R.); farra_aidah@ukm.edu.my (F.A.J.)

² Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan 94300, Sarawak, Malaysia; wlcheah@unimas.my

³ Sports and Recreation Programme & Centre for Education and Community Well-being, Faculty of Education, Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia; denise.koh@ukm.edu.my

⁴ Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan 94300, Sarawak, Malaysia; aclee@unimas.my

⁵ Department of Psychology, University of Roehampton, London SW15 4JD, UK; C.Essau@roehampton.ac.uk (C.A.E.); L.Gibson@roehampton.ac.uk (E.L.G.)

⁶ Department of Life Sciences, University of Roehampton, London SW15 4JD, UK; S.Reeves@roehampton.ac.uk

⁷ Department of Sport and Exercise Sciences, Durham University, Durham DH1 3HN, UK; carolyn.summerbell@durham.ac.uk

* Correspondence: pbkoon@ukm.edu.my; Tel.: +603-9289-7686 (ext. 7511); Fax: +603-2694-7621

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Abstract: As there are few food frequency questionnaires (FFQ) to assess the dietary intake of preschool children, this study examined the validity and reliability of an FFQ for this purpose. A total of 210 preschoolers aged 4 to 6 years participated in the validation study, while a subsample of 66 participants joined the reliability study. The FFQ is modified from the ToyBox-study and South East Asian Nutrition Surveys (SEANUTS), and comprised 108 food items from 13 food groups. A three-day estimated dietary record (3DR) was used as reference and reliability was assessed through a second administration of the FFQ (FFQ2), four weeks after the first administration (FFQ1). For the validation study, Spearman's correlation coefficients showed moderate to high correlations ($p < 0.001$) between FFQ and 3DR. Cross-classification of quartile analysis showed moderate agreement between the two methods. As for reliability, Spearman's correlation coefficients showed moderate to high correlations ($p < 0.001$) between FFQ1 and FFQ2. Cronbach's alpha values (0.708 to 0.824) and intraclass correlation coefficients (0.710 to 0.826) showed good agreement between repeated FFQs. The results suggest that the FFQ has acceptable validity and good reliability. Hence, the FFQ can be used to assess preschool children's food intake.

Keywords: child; dietary assessment; diet records; food frequency questionnaire; Malaysia; methodological study; preschool; reliability; validity