Validation of a semi-quantitative food-frequency questionnaire used among 2-year-old Norwegian children

by

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Objectives
The knowledge of dietary habits and food intake among preschool children is essential for monitoring nutrition status, evaluation of nutrition intervention and epidemiological research. The aim of this study were to assess the validity of a semi-quantitative food-frequency questionnaire (SFFQ) used in a nation-wide survey among 2-year-old children in Norway.

Design
The SFFQ was administered to parents of children in day-cares close to Oslo. Approximately 14 days after parent’s completed the SFFQ, both parents and day-care staff completed a 4-day weighed food diary (WFD), Wednesday to Saturday.

Subjects
Forty one families with children aged 17 to 39 months (median age 26.5 months) completed both methods.

Results
In order to gain information on the ability of the questionnaire to assess intake of different foods in the diet, comparisons at the food level were made for 17 items. There were no significant differences between the two methods according to median intake of 13 out of 17 food groups. For cereals and cakes the intakes were reported lower in the questionnaire than in the food diary while infant food and supplements were reported higher. The Spearman correlation between the two methods varied from -0.1 for fish intake to 0.67 for supplements. The median correlation for food intake was 0.35. Most Bland-Altman plots showed that differences between intakes of food items from the two methods seemed systematically to increase with increasing intake. Average absolute intake of energy and nutrients showed significant difference between the two methods for three out of 19 nutrients. On average 45% of the subjects were classified in the same tertile with the two methods according to nutrient intake.

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Conclusions

This study indicates that the SFFQ may be a valuable tool for measuring average intakes of several nutrients and food items among 2-year-old children in Norway. The ability of the questionnaire to rank children according to intakes of nutrients and food items was rather low.