Accuracy of self-reported intake of signature foods in a school meal intervention study: comparison between control and intervention period

Bias in self-reported dietary intake is important when evaluating the effect of dietary interventions, particularly for intervention foods. However, few have investigated this in children, and none have investigated the reporting accuracy of fish intake in children using biomarkers. In a Danish school meal study, 8- to 11-year-old children (n 834) were served the New Nordic Diet (NND) for lunch. The present study examined the accuracy of self-reported intake of signature foods (berries, cabbage, root vegetables, legumes, herbs, potatoes, wild plants, mushrooms, nuts and fish) characterising the NND. Children, assisted by parents, self-reported their diet in a Web-based Dietary Assessment Software for Children during the intervention and control (packed lunch) periods. The reported fish intake by children was compared with their ranking according to fasting whole-blood EPA and DHA concentration and weight percentage using the Spearman correlations and cross-classification. Direct observation of school lunch intake (n 193) was used to score the accuracy of food-reporting as matches, intrusions, omissions and faults. The reporting of all lunch foods had higher percentage of matches compared with the reporting of signature foods in both periods, and the accuracy was higher during the control period compared with the intervention period. Both Spearman's rank correlations and linear mixed models demonstrated positive associations between EPA+DHA and reported fish intake. The direct observations showed that both reported and real intake of signature foods did increase during the intervention period. In conclusion, the self-reported data represented a true increase in the intake of signature foods and can be used to examine dietary intervention effects.

General information
Publication status: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition, Research group for Risk Benefit, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, University of Copenhagen, University of Waterloo
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Number of pages: 10
Pages: 635-644
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: British Journal of Nutrition
Volume: 114
Issue number: 4
ISSN (Print): 0007-1145
Ratings:
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.52 SJR 1.642 SNIP 1.287
Web of Science (2015): Impact factor 4.051
Web of Science (2015): Indexed yes
Original language: English
Keywords: Web-based food diaries, n-3 fatty acids, Direct observation, Matches, Intrusions, Omissions, Faults
Electronic versions:
S0007114515002020a.pdf
DOIs: 10.1017/s0007114515002020
Source: FindIt
Source ID: 2279829473
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review