Summer Conference 2022, 12–15 July 2022, Food and Nutrition: pathways to a sustainable future

Comparison of McCance and Widdowson's food composition tables v7 and v6 in myfood24, an online dietary assessment tool

J. Wang[1], C. Lo[1], G. Williams[2] and J.E. Cade[1,2]

[1]*Nutritional Epidemiology Group, School of Food Science and Nutrition, University of Leeds, UK and*
[2]*Dietary Assessment Ltd, Nexus Building University of Leeds, Leeds, UK*

Online self-administered dietary assessment tools can provide access to large electronic food databases. As the food supply changes over time, these must be renewed and updated. The impact of these database updates on nutrient calculations in a research context is not known. Our aim was to compare the performance of myfood24 based on the newest version of the UK generic database, the 7th Edition of the McCance and Widdowson's the Composition of Foods (MWv7) with the previous version (MWv6). MWv6 was used in myfood24 with a previous validation study. Results from both tables were compared against each other, against interviewer recall and against biomarkers. An online dietary assessment tool, myfood24 was previously validated against a traditional interviewer- led multiple-pass 24-h recall and biomarkers. Daily food consumption data from three non- consecutive days entered by 120 participants in the original myfood24 validation study[1] were re- entered into the system. The generic food composition database in myfood24 had been updated to MWv7 since the original study. Energy and nutrients from myfood24 (MWv7) showed strong agreement with the data from myfood24 (MWv6), with intraclass correlation coefficients (ICC) ranging from 0.71 (Vitamin D) to 0.96 (Protein). Mean differences in nutrient values between MWv7 and MWv6 were not statistically significant. In comparison to the 24 h interviewer led recall, MWv7 myfood24 nutrient values were slightly lower, but differences were not statistically significant. Bland- Altman limits of agreement were within acceptable limits and showed no significant deviation between the two methods, reflecting the reliability and validity of myfood24. Estimated protein, potassium, sodium, total sugars, β-carotene and vitamin C from both datasets were compared with their biomarkers. Moderate agreement was demonstrated between estimated nutrient intakes from both MWv7 and MWv6 and biomarkers for protein (MWv7 ICC 0.43, LOA -61, 68; MWv6 ICC 0.46, LOA - 60, 64) and potassium (MWv7 ICC 0.43, LOA -1.5, 2.8; MWv6 ICC 0.43, LOA -1.6, 2.7). The results of the comparisons between myfood24 based on MWv7 with bio-markers compare favourably with myfood24 based on MWv6 with biomarkers, with broadly similar mean differences. The results demonstrate that updating a food composition database from MWv6 to MWv7 in myfood24 does not substantially affect nutrient results. Use of an online dietary analysis tool is comparable to the more burdensome interviewer-based 24-h dietary recall and is sufficiently valid and reliable for the collection of dietary data particularly in large epidemiological studies addressing the relationships between diets and health.

Reference

1. Wark PA, Hardie LJ, Frost GS, *et al.* (2018) *BMC Medicine* **16**, 136.