



Abstract

Validation and Reproducibility of a Web-Based Dietary Assessment Tool—MyFood24—In a Danish Population: A Cross-Sectional Validation Study [†]

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[†] Presented at the 14th European Nutrition Conference FENS 2023, Belgrade, Serbia, 14–17 November 2023.

Abstract: Background: The validation and reproducibility assessment of dietary assessment tools are needed in order to assess the precision and accuracy of the methods applied when estimating habitual intake. Using objective biomarkers in these validation studies is a further strength. Earlier validation studies showed high rates of underestimation of dietary energy intake. Myfood24 is an online tool that was developed in 2015 in the UK with the aim of being able to cover the need for high-quality dietary assessment instruments with a high validity and reliability for all ages, and it has already been validated in settings consisting of British and German adults, but not in a Danish population. Objective: To assess the validity and reproducibility of a self-administered 7-day web-based dietary assessment tool, Myfood24[®], among healthy Danish adults regarding objective biomarkers, and to assure the quality of a self-administered web-based dietary recall tool as a valid dietary assessment method for internal use. Methods: A cross-sectional study with repeated measurements is being conducted with healthy adults from both sexes. Participants are asked to complete a self-administered web-based 7-day 24 h dietary recall tool (Myfood24[®]) at baseline and 4 weeks after (± 1 weeks). The validity of this tool will be assessed by comparing the estimated mean dietary intake obtained by the tool with reference measures of energy metabolism and objective biomarkers of intake of selected nutrients: measurements of the concentration of urea, creatinine, and potassium analyzed in a 24 h urine sample, as well as folic acid in fasting blood plasma samples as a biomarker of intake of fruit and vegetables. The estimated dietary intake of energy will be compared with resting energy expenditure (REE) measured by means of indirect calorimetry and multiplied by a PAL value obtained from the IPAQ-International Physical Activity Questionnaire. Reproducibility will be assessed by means of comparison of the results of two 7-day web-based dietary assessments obtained by Myfood24[®], 4 weeks apart. Preliminary results: Among 164 interested subjects, a total of 67 were eligible according to the inclusion and exclusion criteria. At the time of writing, 35 subjects (9M/26 F) have completed the first visit of the study, while 97 subjects have been excluded. Of the included subjects, 24 have finished the second dietary recording and finished their participation after a final meeting with a dietician. The trial will end in September 2023. The baseline characteristics (mean \pm SD) are as follows: age, 55.2 \pm 10 years; height, 1.69 \pm 0.09 m; body weight, 74.4 \pm 10.6 kg; and BMI, 25.8 \pm 2.4. REE was 1427 \pm 201 kcal. Discussion: The recruitment is still ongoing. More results will be ready to be presented at the FENS conference.

Keywords: validation; dietary assessment; Myfood24; reproducibility



Citation: Kisi, S.B.; Rasmussen, S.I.I.; Petersen, C.F.; Hitz, M.F.; Tetens, I. Validation and Reproducibility of a Web-Based Dietary Assessment Tool—MyFood24—In a Danish Population: A Cross-Sectional Validation Study. *Proceedings* **2023**, *91*, 399. <https://doi.org/10.3390/proceedings2023091399>

Academic Editors: Sladjana Sobajic and Philip Calder

Published: 8 March 2024



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Author Contributions: Conceptualization, design and methodology: I.T. and S.B.K.; Investigation: S.B.K., S.I.I.R. and C.F.P.; Resources: I.T. and M.F.H. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: This project was approved by the Scientific Ethics Committee, Capital Region, Protocol notification number: 91474. The trial is registered at clinicaltrials.gov (NCT05600530).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

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