

## Usability of a web-based food frequency questionnaire app (eNutri) and a 24-hour dietary recall system (Intake24) in adults aged 65+ years

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Cognitive decline in older adults may affect the accuracy and ease of completing retrospective dietary assessments<sup>(1)</sup> and evidence suggests that older adults may find structured assessments using fixed food lists (e.g., food frequency questionnaires (FFQ)) easier to complete than open-ended recalls (e.g., 24-hour recalls)<sup>(2)</sup>. In our study, a UK older adult population (65+ years) completed both a web-based FFQ (eNutri) assessing diet over the previous four weeks and a web-based 24-hour recall (Intake24). Here, we present participants' feedback on ease of use and preferences between the two systems. 91 non-diseased adults aged 65+ years were recruited primarily from the University's nutrition volunteer database. During the study, participants were asked to complete: the eNutri FFQ, the 10-item System Usability Scale questionnaire<sup>(3)</sup> about eNutri and three Intake24 recalls within a 2-week period. Participants rated how easy eNutri and Intake24 were to use (out of 10) and state which one, if any, they would prefer to use in the future and their reasons for this choice. The 91 participants, 70% female, had a mean age of 71 years (SD± 5.01, range = 65–87 years). The mean SUS score for eNutri was 74.8 (SD ±12.1 range = 35.0–97.5). For comparison, the SUS for Microsoft Excel and an ATM are 56.5 and 82.3 respectively and a score of 71.4 or higher indicates good usability<sup>(3)</sup>. The average ease of use rating out of 10 (with 10 being the highest) for eNutri and Intake24 were 7.6 (SD± 1.9) and 7.8 (SD± 1.9) respectively. Out of those who indicated which of the two systems they would prefer to use, 49% said 'either', 28% 'Intake24', 19% 'eNutri', and 5% 'something else'. Of those who preferred Intake24, 50% (*n* = 11) stated that their preference was based on an easier recall period (24 hours vs 4 weeks). Some who preferred eNutri liked being asked directly about particular food/drinks they had consumed (versus needing to recall freely). The study showed that both eNutri and Intake24 had comparable ease of use ratings and therefore both web-based tools could be used to assess the dietary intake of older adults. The eNutri SUS score indicated good acceptability of the system. Advantages of eNutri include the use of direct questions and a fixed food list, whilst an advantage of Intake24 was the short recall period. These results focus on usability and subjective preferences and need to be considered alongside data on the accuracy of these dietary assessment methods in an older adult population.

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