



Section

Fields (of activity)

Test of a self-administered web application to collect data on food consumption in the Swiss population

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Key words

ASA24, 24-hour dietary recall, self-administered web application, food consumption, think aloud method, online survey, interviews, French-speaking part of Switzerland, nutritional epidemiology.

Aim of the study

To assess dietary intake in nutritional research, 24-hour recall is a recommended method. Among available tools, ASA24 is a free, self-administered web application, which has been widely validated in north American countries and translated into French-Canadian. The aim of this pilot study was to test a 24-hour recall survey protocol using ASA24 in different age groups from the French-speaking part of Switzerland. We assessed the acceptability of ASA24, its ease of use, and performance, in adults aged 18 to 64, children aged 3 to 6, adolescents aged 13 to 17, and seniors aged 65 and over.

Material and methods

This observational pilot study involved French-speaking participants with access to a computer, tablet or smart-phone and with no strict exclusion diet for medical reasons. We recruited participants using flyers, social media, emails to nurseries, sport clubs, etc.

First, in a pre-test, one participant of each age group completed ASA24 online while taking part in the think aloud method by videoconference with a researcher. Researchers also tested ASA24. These findings were used to develop an explanatory video and guide of ASA24 for the main study.

Then, for the main study, the participants were asked *i)* to complete a 24-hour recall using ASA24 on two occasions, *ii)* to complete an online survey, comprising the System Usability Scale (SUS), to give their opinions on ASA24, and *iii)* for a subgroup, to participate in a semi-structured interview with a researcher in order to provide further details on their experience with ASA24.

Results and significance

Of the 129 persons interested in the study, 92 were included and 80 finished the study. Most were women (70%), Swiss (80%), had intermediate occupations, and reported to be fluent or very fluent with technology. The majority completed ASA24 using a computer, without assistance, found foods and drinks most of the time, and said the explanatory video was useful. The mean duration to complete ASA24 was 35 ± 18 minutes for the first recall and 28 ± 15 minutes for the second. In seniors, it was 52 ± 26 et 42 ± 20 minutes, respectively. The mean SUS score was 64.8 ± 17 , that is between acceptable and good, and ranged from 58 ± 24 in seniors to 71 ± 17 in adults aged 18 to 35 years. As expected, participants struggled with typical Swiss foods, portion sizes in ounces and meal times expressed in "am/pm".

The mean caloric intake was $2'146 \pm 794$ kcal/day and $2'248 \pm 1'348$ kcal/jour, respectively. A difference of more than $\pm 20\%$ between estimated energy requirements and energy intake declared in ASA24 was observed for 60% and 70% of participants, respectively. Overestimation was observed in children. The reported caloric intake was < 500 kcal/day in one adolescent and $> 4'000$ kcal/day in four participants.

In interviews, opinions on ASA24 differed between and within age groups. Parents, adolescents and adults aged 18-35 tended to be positive, adults aged 36-64 tended to be negative and older people had mixed views.

In conclusion, this pilot study showed that ASA24 was well accepted, easy to use and provided plausible results in adults aged 18 to 35. In the other age groups, some difficulties emerged, specifically related to recruitment, duration and assistance required to complete the ASA24. An adaptation to the Swiss context would certainly further improve the use of ASA24 in our country and probably solve the issue of overestimation, as standard portions in North America are often significantly bigger than in Switzerland.

Publications, posters and presentations

A publication in a scientific peer-reviewed open-access journal will follow.

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