Original research

Comparison of fruit and vegetable frequency data from two Australian national surveys

Dorothy Mackerras, Jeremy Levy, Jonathan Shaw and Paul Zimmet

Abstract

Objective: To compare the fruit and vegetable intakes reported in the 1995 National Nutrition Survey and the 1999–2000 Australian Diabetes, Obesity and Lifestyle Study.

Design: Two national cross-sectional surveys.

Subjects: 5604 and 11 041 adults aged 25 years and older.

Setting: All states and territories of Australia.

Main outcome measures: Frequency of intake of a range of fruit and vegetables, total frequency of fruit and vegetable consumption and agreement between total frequency and responses to global questions about fruit and vegetable intakes. Comparisons between surveys are justified because the Apparent Consumption data showed little change in availability between the surveys.

Statistical analyses: The proportion eating individual fruit and vegetable items at least once per week, the population distributions of the total fruit and vegetable frequencies and responses to the global questions were calculated for each survey allowing for sampling strategies. Agreement between the total frequency and the global questions within each survey was examined using weighted kappa.

Results: The proportion reporting eating individual items at least weekly was similar (within 4%) between surveys for most commonly eaten foods. Population distributions of fruit intake derived from the total frequency and global questions were broadly similar in the two surveys. However, within each survey, the frequency sum and global question showed only moderate agreement (kappa = 0.5). The population distributions of vegetable intake derived from total frequency were similar in the two surveys after excluding items which may have been reported twice in the National Nutrition Survey. However, the distribution from the global vegetable question was different in the two surveys. The agreement between the total frequency and global question for vegetables within each survey was poor to fair (kappa = 0.2 or 0.3). Using the frequency totals, the top quintile of vegetable consumption in both surveys is six or more serves per day but only four or more serves per day by the global question.

Conclusion: In the absence of formal comparisons between the two surveys, this study indicates that many of the individual fruit and vegetable items are reported with reasonable consistency across time. However, there is enough variation that small changes across time in different surveys may not be due to true population change in intake. The global questions should not be compared to quantitative criteria until more work showing that they are valid for this purpose has been done.

Key words: fruit, vegetables, questionnaires, validity, nutritional epidemiology, surveillance